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Missouri Timber Industry—An Assessment of Timber Product Output and Use, 1991

Ronald L. Hackett, Shelby G. Jones, and Ronald J. Piva

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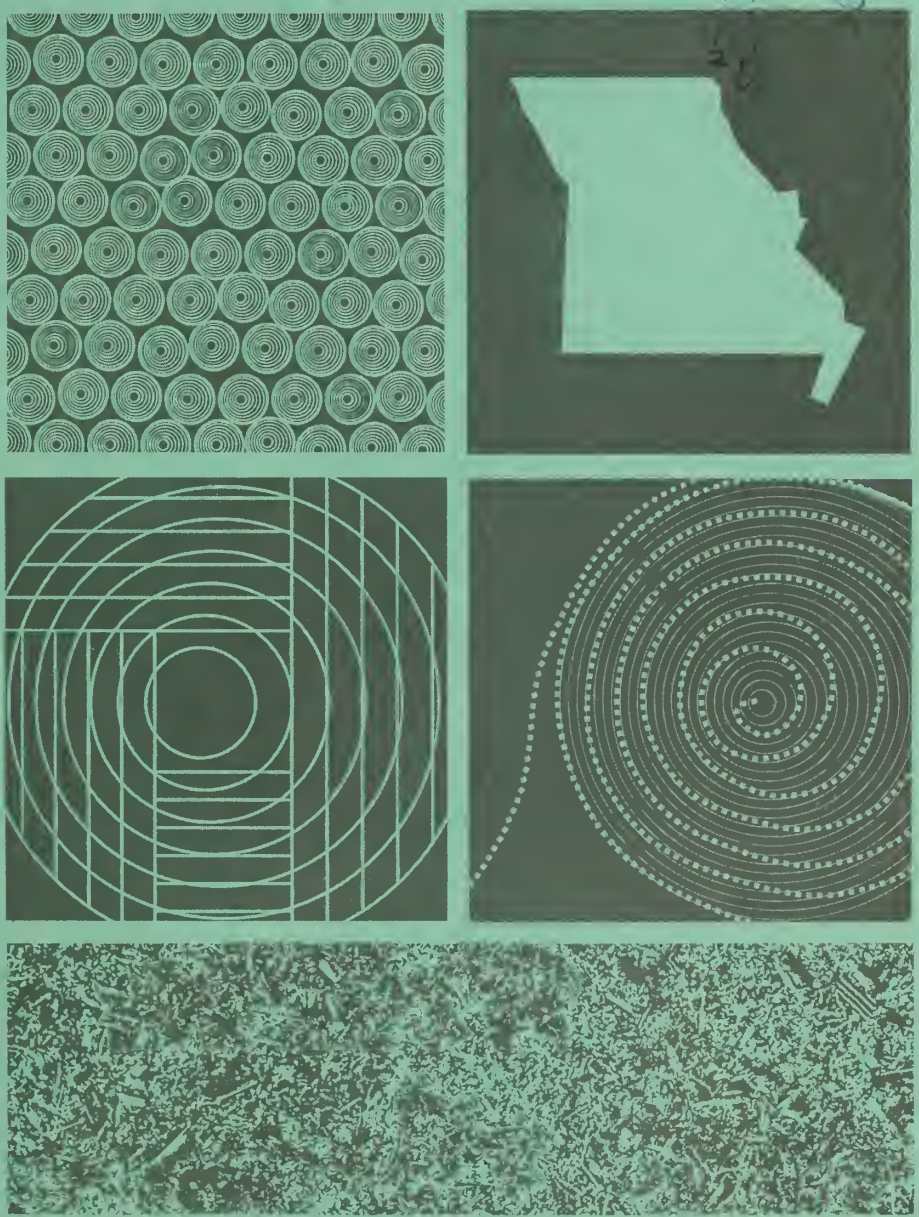

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North Central Forest Experiment Station
Forest Service—U.S. Department of Agriculture
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St. Paul, Minnesota 55108
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FOREWORD

This bulletin discusses recent Missouri forest industry trends and contains the results of a detailed study of forest industry, industrial roundwood production, and associated primary mill wood and bark residue in Missouri in 1991. Such detailed information is necessary for intelligent planning and decisionmaking in wood procurement, forest resource management, and forest industry development. Likewise, researchers need current forest industry and industrial roundwood information for planning projects.

Special thanks are given to the primary wood-using firms that supplied information for this study and to the Missouri Department of Conservation foresters who canvassed these respondents. Their cooperation is greatly appreciated.

All references to red oak in this paper are for the red oak group, which excludes black oak but includes northern red oak, cherrybark oak, shumard oak, scarlet oak, southern red oak, shingle oak, blackjack oak, water oak, and pin oak. Similarly, all references to white oak are for the white oak group, which includes white oak, swamp white oak, bur oak, swamp chestnut oak, chinkapin oak, overcup oak, and post oak.

All board foot data in this report have been converted to International 1/4-inch scale by applying a multiplier of 1.38 to all saw-log and handle bolt volumes reported in Doyle scale by sawmills and handle mills and by applying a multiplier of 1.14 to all veneer log and cooperage log volumes reported in Doyle scale by veneer and cooperage mills. To convert to Doyle log scale, multiply the International scale volume for saw logs and handle bolts by 0.7246, and multiply the International scale volume for veneer logs and cooperage logs by 0.8772.

The last study of industrial roundwood output in Missouri was conducted in 1987. Data in this report are compared with the 1987 study results. Quantities shown may vary slightly from one table to another because of rounding differences, but these differences are usually insignificant.

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Missouri Timber Industry—An Assessment of Timber Product Output and Use, 1991

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HIGHLIGHTS

PRIMARY TIMBER INDUSTRY—INDUSTRIAL ROUNDWOOD

In 1991, 471 primary wood-using mills were operating in Missouri. Saw mills dominate Missouri's forest industry in terms of volume of wood used. Missouri's production of industrial roundwood is reported by the five Forest Survey Units in the State (fig. 1).

- Industrial roundwood production rose from 100 million cubic feet in 1987 to 121 million cubic feet in 1991. Roundwood production increased 21 percent for hardwoods and 30 percent for softwoods.
- Saw logs accounted for 78 percent of the industrial roundwood harvest in 1991 compared to 90 percent of the harvest in 1987 (fig. 2).

Ronald L. Hackett, Research Forester, received a B.S. degree in forest resources from the University of Minnesota. He joined the Forest Service in December 1974, and has been working with the North Central's Forest Inventory and Analysis Unit since.

Shelby G. Jones, Staff Supervisor - Utilization and Measurements, received a B.S. degree in Forestry from the University of Missouri in 1966. He joined the Missouri Department of Conservation in October 1966, and has been assigned to various field and staff positions since that time. He has supervised the Forest Products Utilization and Marketing program since 1978.

Ronald J. Piva, Forester, received a B.S. degree in forest management from the University of Missouri-Columbia. He joined the Forest Service in 1989, and has been working with the North Central's Forest Inventory and Analysis Unit since.

- Saw-log production rose from 503 million board feet in 1987 to 530 million board feet in 1991.
- Four principal saw-log species—black oak, white oak, red oak, and shortleaf pine—accounted for 78 percent of the saw logs supplied to the mills.
- During 1991, Missouri produced 16 thousand cords of pulpwood, 8 thousand cords less than in 1987.
- Missouri loggers cut 7.5 million board feet of veneer logs in 1991, 60 percent more than in 1987.
- Missouri veneer mills imported 5 million board feet in 1991.
- Total material harvested from timberland for industrial roundwood (excluding residential fuelwood) in 1991 was 189 million cubic feet. Growing stock accounted for 65 percent (122 million cubic feet) of this total.
- Only one-fourth of all the mill residue generated remained unused; most of this was fine residue.

SAW LOGS

- Loggers cut nearly 530 million board feet of Missouri saw logs in 1991, up 4 percent (21 million board feet) from 1987. Nearly 30 percent was black oak.
- Major saw-log species harvested in 1991 were black oak, white oak, red oak, and shortleaf pine. Red oak and cottonwood were the only species to have major declines in production between 1987 and 1991—38 and 5 million board feet, respectively (fig. 3).

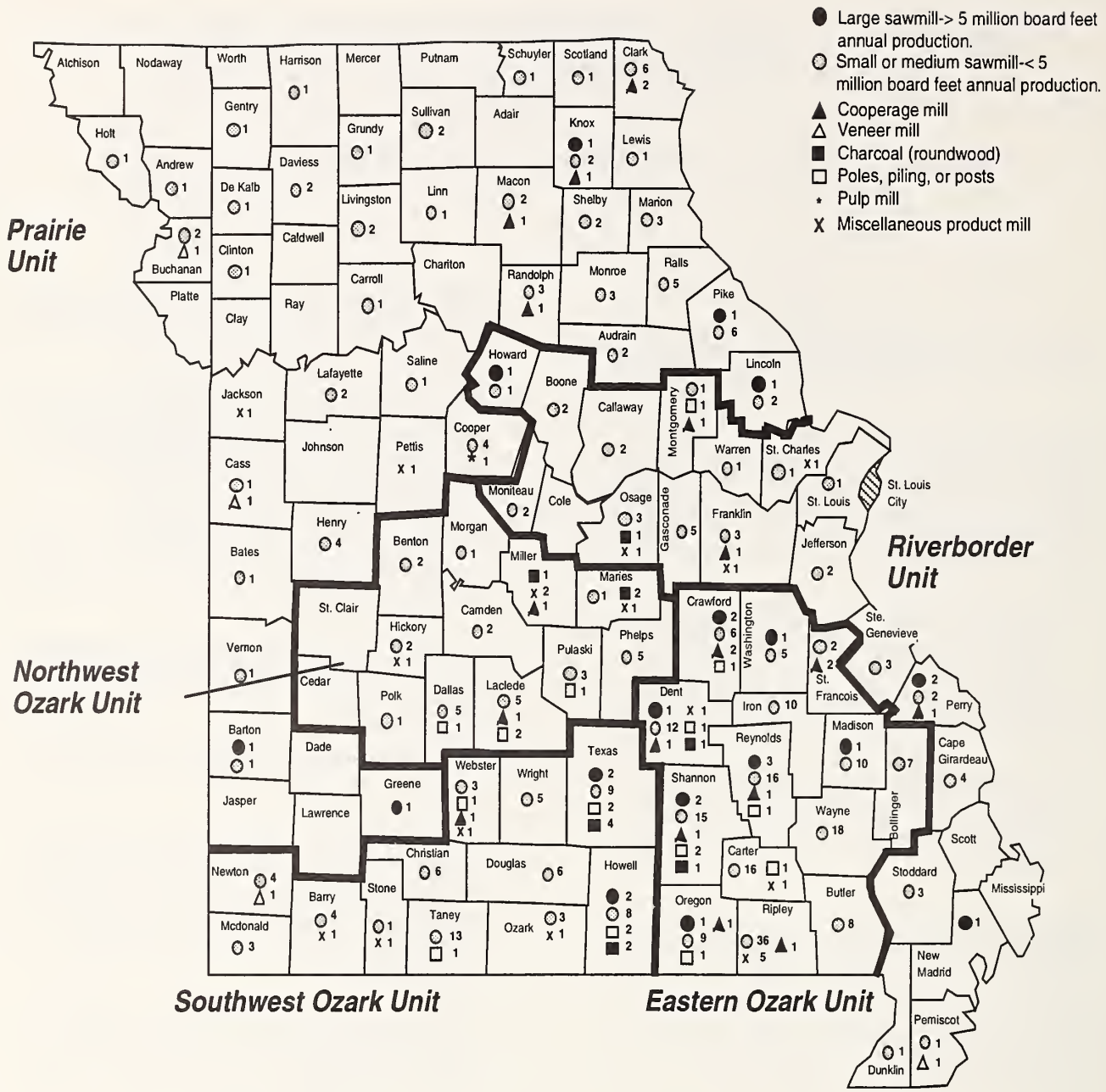

Figure 1.—*Primary wood-using plants in Missouri, 1991.*

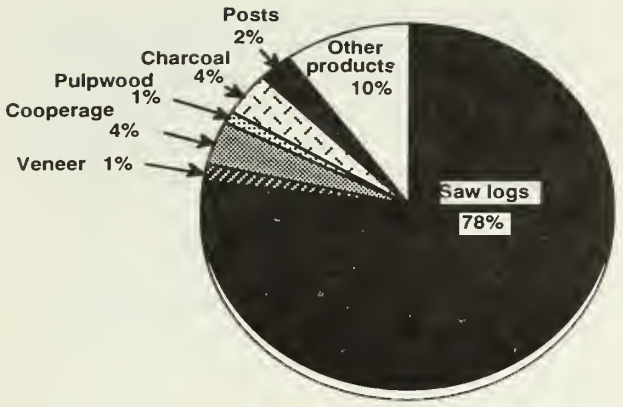

Figure 2.—*Industrial roundwood production in Missouri by type of product, 1991.*

- Saw-log production was the highest in the Eastern Ozark Unit of Missouri with 277 million board feet or 52 percent of the total saw-log production in 1991. The Southwest Ozark and Prairie Units together provided another 33 percent of the saw logs cut in Missouri.

- Two percent of the saw-log volume—primarily black walnut, red oak, white oak, and black oak—was shipped to Kansas, Arkansas, Iowa, and other States outside the region.

- In 1991, 395 operating sawmills in Missouri received 568 million board feet of saw logs; in 1987, 410 saw mills received 540 million board feet.

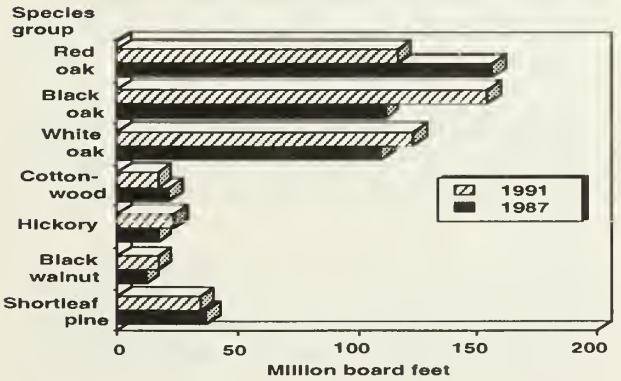

Figure 3.—*Saw-log production in Missouri by selected species group, 1987 and 1991.*

- Missouri imported a total of 46 million board feet of saw logs from Illinois, Arkansas, Iowa, Indiana, Kansas, and other States. Major imported species were red oak, white oak, cottonwood, and black walnut.

- Average annual lumber output per saw mill rose 9 percent from 1.3 million board feet in 1987 to 1.4 million board feet in 1991.

VENEER LOGS

- Loggers cut 7.5 million board feet of Missouri veneer logs and bolts in 1991, nearly 60 percent more than in 1987.

- Of the 7.5 million board feet of veneer logs and bolts cut in 1991, 98 percent remained in the State, and the remaining two percent was exported to Illinois, and other countries.

- Black walnut was the primary veneer species cut in Missouri, followed by white oak, red oak, and cottonwood (fig. 4). Black walnut and white oak were the only species shipped to Illinois and Canada for export to the Pacific Rim and Europe.

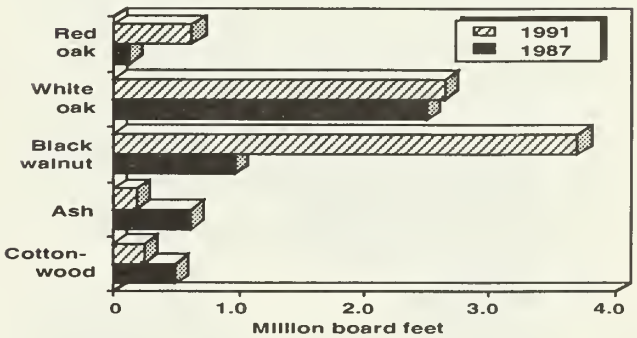

Figure 4.—*Veneer log and bolt production by major species in Missouri, 1987 and 1991.*

- Four Missouri veneer mills received nearly 13 million board feet of logs and bolts. Imports totaled more than 5 million board feet from surrounding States and other States outside the region. Iowa and Arkansas each contributed more than 1 million board feet of veneer logs and bolts.

- White oak and cottonwood were the two major species imported in 1991 with 2.2 million board feet and 1.3 million board feet, respectively.

COOPERAGE LOGS

- In 1991, 29.1 million board feet of cooperage logs were cut by loggers in Missouri, nearly 1 1/2 the amount cut in 1987.

- White oak was the predominant species used for cooperage in 1991 with 28.1 million board feet.

CHARCOAL

The information presented in this report pertains to primary production of products from roundwood. Table 20, however, shows how much residue material went into the production of charcoal. At least 10 operations in the State use residues exclusively for charcoal production, but they are not included as primary mills in table 1 because they do not process roundwood.

- Charcoal production from roundwood increased from 39 thousand cords in 1987 to 67 thousand cords in 1991.

- White, black, and red oak accounted for more than 80 percent of all the charcoal produced from roundwood; hickory contributed another 12 percent (fig. 5).

- Production for charcoal was mainly concentrated in the three Ozark Units.

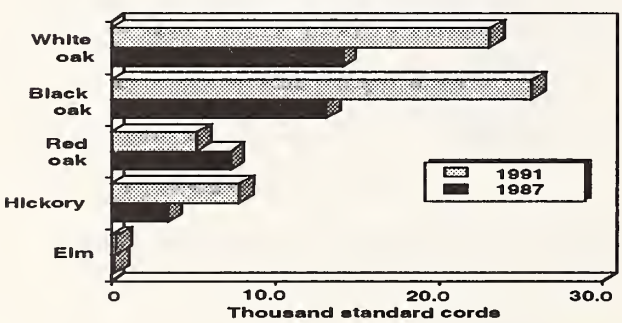

Figure 5.—*Charcoal roundwood production in Missouri 1987 and 1991.*

PULPWOOD

- Wood residues, generated from primary wood-using mills, were the major source of the pulpwood in Missouri, accounting for the equivalent of 71 thousand cords in 1991 (fig. 6).

- Loggers in Missouri cut nearly 16 thousand cords of pulpwood roundwood in 1991, a 43-percent drop from 1987. Soft hardwoods[1], predominately cottonwood, soft maple, and sycamore, accounted for 64 percent of the roundwood harvested for pulpwood. Hard hardwoods[2], predominately black, red, and white oaks, elm, ash, and other hardwoods accounted for another 33 percent of roundwood cut for pulpwood.

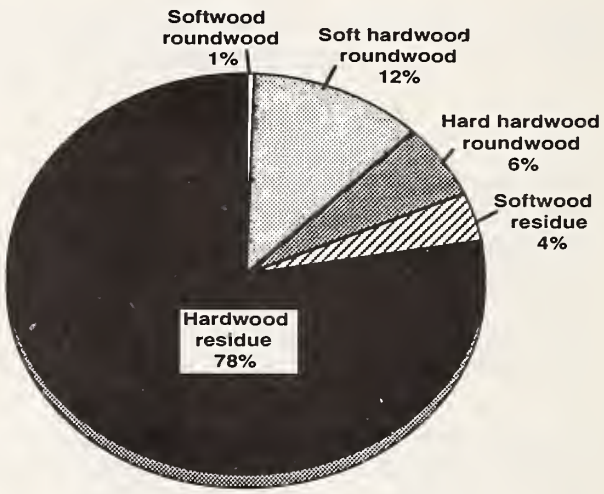

Figure 6.—*Pulpwood production in Missouri by species group and type of residue, 1991.*

- All of the roundwood pulpwood harvested in 1991 came from the Prairie and Riverborder Units.

OTHER PRODUCTS

- More than 4 million posts were cut in 1991, primarily from pine, cedar, oak, and osage-orange. More than half of the posts were cut in the Southwest Ozark Unit.

- Handle bolts and other miscellaneous products accounted for 10 percent of the industrial roundwood cut in Missouri in 1991.

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[1] *Hardwood species with an average specific gravity of 0.50 or less (cottonwood, basswood, black gum, etc.).*

[2] *Hardwood species with an average specific gravity greater than 0.50 (all oaks, elm, green ash, etc.).*

Residential fuelwood is a major nonindustrial product in Missouri. The results of a 1987 residential fuelwood study are available in "Residential Fuelwood Production and Sources from Roundwood in Missouri", 1987, RB-NC-132.

TIMBER REMOVALS

- In the production of Missouri's industrial roundwood harvest, 121.8 million cubic feet of growing stock was removed from timberlands in 1991, a 21-percent increase since 1987.

- Total amount of material harvested for industrial roundwood in 1991 (exclusive of residential fuelwood) was 189 million cubic feet. Thirty-six percent was left in the woods as logging residues (fig. 7). Residue material includes tops, limbs, cull material, and growing-stock material not used for products.

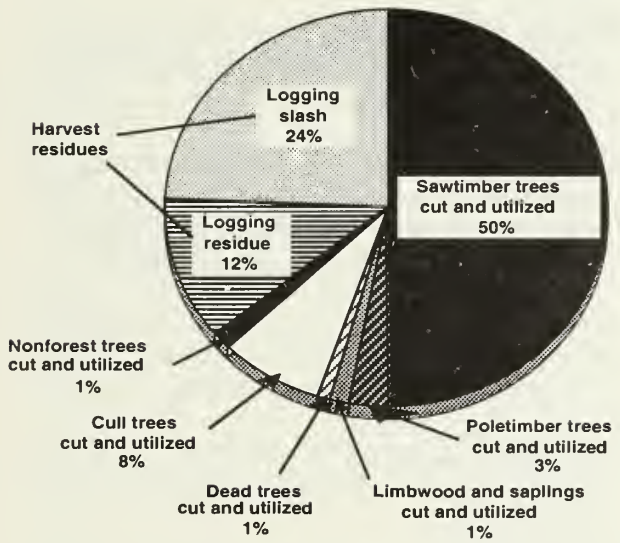
Logging slash 24%
Harvest residues
Sawtimber trees cut and utilized 50%
Logging residue 12%
Nonforest trees cut and utilized 1%
Cull trees cut and utilized 8%
Poletimber trees cut and utilized 3%
Dead trees cut and utilized 1%
Limbwood and saplings cut and utilized 1%

Figure 7.—*Distribution of trees and tree material harvested for industrial roundwood in Missouri, 1991.*

- Major species harvested from both growing stock and sawtimber were oak (white, red, and black), shortleaf pine, hickory, and soft maple.

HARVEST RESIDUE

- During 1991, loggers in Missouri generated an estimated 67.6 million cubic feet of harvest residues. Harvest residues consist of all wood fiber left behind from trees cut or killed during logging operations on timberland and not subsequently used for industrial products.

- Black, white, and red oak accounted for 72 percent of all logging residues in 1991.

- Three counties—Reynolds, Wayne, and Shannon—each produced more than 4 million cubic feet of logging residue. All counties except Butler and St. Francois in the Eastern Ozarks had more than 1 million cubic feet of residues.

PRIMARY MILL RESIDUE

- Only one-fourth of all the mill residue generated remained unused; most of this was fine residue.

- Charcoal plants used 38 percent of the total mill residues produced in 1991. Pulpwood mills consumed 9 percent of the coarse mill residue for fiber products and industry, and households consumed 15 percent for fuel (fig. 8).

- Fine mill residue and bark were used primarily for industrial fuel, soil conditioner, mulch, livestock bedding, and poultry litter.

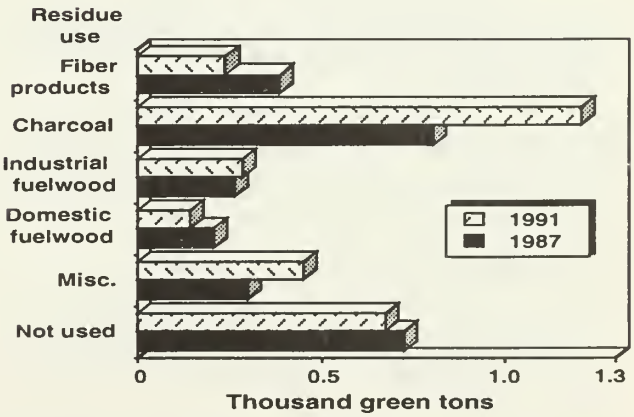

Figure 8.—*Disposition of mill residues by major use in Missouri, 1987 and 1991.*

APPENDIX

STUDY METHODS

Data for this publication came from canvassing (with a formal questionnaire) all of the known primary wood-using mills that use Missouri logs and bolts. The study was a cooperative effort of the Missouri Department of Conservation (MDC) and the North Central Forest Experiment Station (NCFES). MDC foresters personally canvassed all the known Missouri primary mills (except one pulpmill). MDC forest products specialists provided estimates based on prior knowledge and contacts for a few Missouri mills that did not furnish complete data.

The NCFES mailed a formal questionnaire to the Missouri pulpmill and all out-of-State mills using Missouri roundwood. Followup of nonrespondents was by mail and telephone.

Logging utilization factors were used to estimate the logging residue. These factors were determined from Missouri logging utilization studies done by the NCFES during 1971-72 and 1986-87.

The NCFES edited and compiled the data.

SAMPLING ERROR

Because all primary wood-using mills were canvassed, there is no sampling error for data on the roundwood products they used or the wood and bark residue they generated.

DEFINITION OF TERMS

Coarse mill residue.—Wood residue suitable for chipping such as slabs, edgings, and veneer cores.

Fine mill residue.—Wood residue not suitable for chipping, such as sawdust and veneer clippings.

Forest Survey Unit.—A geographic area (group of counties) used by the Forest Inventory and Analysis Project to report periodic inventories and use of the Nation's forest resources.

Harvest residues.—The total unused wood material left after harvesting.

Industrial roundwood products.—Saw logs, pulpwood, veneer logs, poles, commercial posts, piling, cooperage logs, particleboard bolts, shaving bolts, lath bolts, charcoal bolts, and chips from roundwood used for pulp or board products.

Industrial roundwood production.—The quantity of industrial roundwood harvested in a geographic area.

Industrial roundwood receipts.—The quantity of industrial roundwood received in a geographic area regardless of the geographic source.

Logging residue.—The unused portions of growing-stock trees cut or killed by logging.

Logging slash.—The unused portion of unmerchantable trees or sections of trees cut or killed by logging.

Primary wood-using mills.—Mills receiving roundwood or chips from roundwood for processing into products.

Primary wood-using mill residue.—Wood materials (coarse and fine) and bark generated at manufacturing plants from roundwood processed into principal products. These residues include wood products (byproducts) obtained incidental to production of principal products and wood materials not utilized for some product.

Roundwood.—Logs, bolts, or other round sections cut from trees (including chips from roundwood).

Standard cord.—A stack of wood bolts (or the equivalent) encompassing 128 cubic feet of wood, bark, and air space. A cord of pulpwood contains 79 cubic feet of wood and 49 cubic feet of bark and air space.

Timberland.—Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. Generally, this includes areas suitable for growing crops of industrial wood in excess of 20 cubic feet per acre annually.

Veneer log.—A log considered suitable in size and quality for producing veneer-sliced or rotary-cut.

COMMON AND SCIENTIFIC NAMES OF TREE SPECIES MENTIONED

SOFTWOODS
Cypress ..... *Taxodium distichum*
Shortleaf pine ..... *Pinus echinata*
Eastern redcedar ..... *Juniperus virginiana*

HARDWOODS
Ash
  White ash ..... *Fraxinus americana*
  Green ash ..... *Fraxinus pennsylvanica*
  Blue ash ..... *Fraxinus quadrangulata*
American basswood ..... *Tilia americana*
Beech ..... *Fagus grandifolia*
River birch ..... *Betula nigra*
Tupelo:
  Blackgum ..... *Nyssa sylvatica* var. *biflora*
  Black tupelo ..... *Nyssa sylvatica* var. *sylvatica*
  Water tupelo ..... *Nyssa aquatica*
Black cherry ..... *Prunus serotina*
Cottonwood ..... *Populus deltoides*
Elm
  Winged elm ..... *Ulmus alata*
  American elm ..... *Ulmus americana*
  Slippery elm ..... *Ulmus rubra*
  Rock elm ..... *Ulmus thomasii*
Hickory
  Pecan ..... *Carya illinoensis*
  Shellbark hickory ..... *Carya laciniosa*
  Shagbark hickory ..... *Carya ovata*
  Mockernut hickory ..... *Carya tomentosa*
  Water hickory ..... *Carya aquatica*
  Bitternut hickory ..... *Carya cordiformis*
  Pignut hickory ..... *Carya glabra*
  Black hickory ..... *Carya texana*
Hard maple
  Black maple ..... *Acer nigrum*
  Sugar maple ..... *Acer saccharum*
Soft maple
  Red maple ..... *Acer rubrum*
  Silver maple ..... *Acer saccharinum*
Red oak
  Cherrybark oak ..... *Quercus falcata* var. *pagodaefolia*
  Northern red oak ..... *Quercus rubra*
  Shumard oak ..... *Quercus shumardii*
  Scarlet oak ..... *Quercus coccinea*
  Southern red oak ..... *Quercus falcata*
  Shingle oak ..... *Quercus imbricaria*
  Blackjack oak ..... *Quercus marilandica*
  Water oak ..... *Quercus nigra*
  Pin oak ..... *Quercus palustris*
  Willow oak ..... *Quercus phellos*
Black oak ..... *Quercus velutina*
White oak
  White oak ..... *Quercus alba*
  Swamp white oak ..... *Quercus bicolor*
  Bur oak ..... *Quercus macrocarpa*
  Swamp chestnut oak ..... *Quercus michauxii*
  Chinkapin oak ..... *Quercus muehlenbergii*
  Overcup oak ..... *Quercus lyrata*
  Post oak ..... *Quercus stellata*
Sweetgum ..... *Liquidambar styraciflua*
American sycamore ..... *Platanus occidentalis*
Black walnut ..... *Juglans nigra*
Yellow-poplar ..... *Liriodendron tulipifera*
Other hardwoods
  Black locust ..... *Robinia pseudoacacia*
  Common persimmon ..... *Diospyros virginiana*
  Flowering dogwood ..... *Cornus florida*
  Honeylocust ..... *Gleditsia triacanthos*
  Red mulberry ..... *Morus rubra*
  Sugarberry ..... *Celtus laevigata*
  Osage-orange ..... *Maclura pomifera*
  Butternut ..... *Juglans cinerea*
  Black willow ..... *Salix nigra*
  Boxelder ..... *Acer negundo*
  Cucumbertree ..... *Magnolia acuminata*
  Hackberry ..... *Celtis occidentalis*
  Kentucky coffeetree ..... *Gymnocladus dioicus*
  Ohio buckeye ..... *Aesculus glabra*
  Sassafras ..... *Sassafras albidum*

TABLE TITLES

Table 1.—Number of active primary wood-using mills in Missouri, 1946, 1958, 1969, 1980, 1987, and 1991

Table 2.—Industrial roundwood production by product and softwoods and hardwoods, Missouri, 1946, 1958, 1969, 1980, 1987, and 1991

Table 3.—Industrial roundwood production by Forest Survey Unit, species group, and type of product, Missouri, 1991

Table 4.—Material harvested for industrial roundwood by source of material and species group, Missouri, 1991

Table 5.—Post production from roundwood by Forest Survey Unit and species group, Missouri, 1991

Table 6.—Charcoal production from roundwood by Forest Survey Unit and species group, Missouri, 1991

Table 7.—Lumber production by Forest Survey Unit for softwoods and hardwoods, Missouri, 1991

Table 8.—Pulpwood production in Missouri by species group, 1965, 1970, 1975, 1980, 1987, and 1991

Table 9.—Pulpwood production by Forest Survey Unit and species group, Missouri, 1991

Table 10.—Saw-log production and receipts in Missouri by species group, 1987 and 1991

Table 11.—Saw-log production by Forest Survey Unit, species group, and State of destination, Missouri, 1991

Table 12.—Saw-log production by Forest Survey Unit, county, and species group, Missouri, 1991

Table 13.—Saw-log receipts in Missouri by Forest Survey Unit, species group, and State of origin, 1991

Table 14.—Veneer log and bolt production by species in Missouri, 1987 and 1991

Table 15.—Veneer log and bolt production in Missouri by species and destination, 1991

Table 16—Veneer log and bolt receipts by species group and area of origin, Missouri, 1991

Table 17.—Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Missouri, 1991

Table 18.—Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Missouri, 1991

Table 19.—Harvest residue generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Missouri, 1991

Table 20.—Residue produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Missouri, 1991

Table 1.--Number of active primary wood-using mills in Missouri, 1946, 1958, 1969, 1980, 1987, and 1991

Kind of mill	1946	1958	1969	1980	1987	1991
Sawmills						
Large 1/	2	5	7	8	13	17
Medium 2/	43	103	117	163	169	172
Small 3/	2,548	882	425	315	228	206
Total	2,593	990	549	486	410	395
Cooperage mills	85	36	36	30	20	20
Veneer mills	6	3	4	4	5	4
Pulp mills	0	2	2	2	1	1
Charcoal 4/	3	60	52	36	15	14
Handle	19	12	7	10	6	6
Posts	6	14	22	28	23	17
Miscellaneous 5/	94	44	9	3	11	14
Total	2,806	1,161	681	599	491	471

1/ Annual lumber production in excess of 5 million board feet.
2/ Annual lumber production from 1 million to 5 million board feet.
3/ Annual lumber production less than 1 million board feet.
4/ Includes only those charcoal operations using roundwood.
5/ Includes plants producing shavings, chips, rails, poles, etc.

Table 2.-- Industrial roundwood production by product and softwoods and hardwoods, Missouri, 1946, 1958, 1969, 1980, 1987, and 1991

(In million cubic feet)

	Softwoods					
Product	1946	1958	1969	1980	1987	1991
Saw logs	8.3	4.1	3.3	5.5	7.8	7.5
Cooperage logs	--	--	--	--	--	--
Veneer logs	--	--	--	--	--	--
Pulpwood	0.1	0.1	--	--	--	--
Charcoal wood	--	--	--	--	--	--
Posts	3.2	0.8	1.2	0.5	0.7	2.6
Fuelwood 1/	0.2	0.2	0.1	--	--	2/
Poles	2/	0.2	0.3	--	2/	--
Mine timbers	2/	2/	--	--	--	--
Handle bolts	--	--	--	--	--	--
Miscellaneous 3/	2/	2/	0.3	0.2	0.6	1.7
Total	11.8	5.4	5.2	6.2	9.1	11.8
	Hardwoods					
Saw logs	71.1	43.7	63.0	66.2	81.9	86.2
Cooperage logs	14.9	4.5	8.9	4.7	2.0	4.8
Veneer logs	1.4	1.0	1.0	0.7	1.0	1.7
Pulpwood	0.5	0.7	1.9	1.9	2.2	1.2
Charcoal wood	0.6	3.2	16.7	6.2	2.7	4.6
Posts	7.8	8.8	1.3	1.2	0.6	0.5
Fuelwood 1/	59.2	61.7	24.4	--	--	--
Poles	--	--	2/	--	0.1	--
Mine timbers	3.4	0.5	0.1	--	--	--
Handle bolts	1.3	1.2	0.4	--	0.1	0.2
Miscellaneous 3/	2.2	5.7	0.7	0.4	0.2	10.4
Total	162.4	131.0	118.4	81.3	90.8	109.6
All products	174.2	136.4	123.6	87.5	99.9	121.4

1/ Does not include residential fuelwood.
2/ Less than 500 cubic feet.
3/ Includes plants producing shavings, chips, rails, poles, etc.

Table 3.-- Industrial roundwood production by Forest Survey Unit, species group, and type of product, Missouri, 1991 1/

ALL UNITS

Species group	Saw logs		Veneer logs		Pulpwood		Charcoal		Cooperage		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cypress	50	8	--	--	--	--	--	--	--	--	--	--	--	8
Shortleaf pine	33,915	5,883	--	--	464	37	--	--	--	--	3,318	2,554	391	8,865
Redcedar	5,915	1,597	--	--	--	--	400	27	--	--	1	--	1,328	2,952
Total	39,880	7,488	--	--	464	37	400	27	--	--	3,319	2,554	1,719	11,825
HARDWOODS														
Ash	5,097	823	184	36	4	--	801	53	100	18	--	--	1,045	1,975
Basswood	348	49	2	--	8	--	--	--	--	--	--	--	7	56
Birch	203	27	--	--	--	--	--	--	--	--	--	--	--	27
Tupelo	614	100	--	--	--	--	--	--	50	10	--	--	--	110
Black cherry	393	59	--	--	--	--	--	--	--	--	--	--	1	60
Cottonwood	16,683	2,344	258	57	4,707	368	--	--	--	--	--	--	161	2,930
Elm	1,913	297	--	--	19	1	425	27	--	--	--	--	13	338
Pecan	985	152	--	--	--	--	--	--	--	--	--	--	--	152
Hickory	23,876	3,922	--	--	434	33	7,807	544	200	34	--	--	1,062	5,595
Hard maple	2,345	374	--	--	--	--	1,932	136	20	2	--	--	--	512
Soft maple	11,016	1,793	24	4	2,197	172	--	--	--	--	--	--	549	2,518
Black oak	153,813	27,365	101	23	666	51	25,626	1,788	--	--	371	209	2,200	31,636
Red oak	116,961	20,797	626	140	509	39	5,212	363	630	104	241	138	1,052	22,633
White oak	122,509	21,798	2,633	606	378	27	23,123	1,616	28,133	4,628	189	105	1,426	30,206
Sweet gum	1,164	188	--	--	--	--	--	--	--	--	--	--	--	188
Sycamore	12,442	2,034	2	--	1,670	128	1,214	81	--	--	--	--	38	2,281
Black walnut	17,394	3,801	3,688	787	4	--	376	26	--	--	--	--	50	4,664
Yellow-poplar	596	97	--	--	--	--	--	--	--	--	--	--	--	97
Other hardwoods	1,339	207	15	1	4,766	375	--	--	--	--	3	1	3,005	3,589
Total	489,964	86,278	7,533	1,654	15,362	1,194	66,516	4,634	29,133	4,796	804	453	10,609	109,567
All Species	529,844	93,766	7,533	1,654	15,826	1,231	66,916	4,661	29,133	4,796	4,123	3,007	12,328	121,392

(Table 3 continued on next page)

(Table 3 continued)

EASTERN OZARK UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Charcoal		Cooperage		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	29,324	5,093	--	--	--	--	--	--	--	--	552	427	--	5,520
Redcedar	606	163	--	--	--	--	--	--	--	--	--	--	--	163
Total	29,930	5,256	--	--	--	--	--	--	--	--	552	427	--	5,683
HARDWOODS														
Ash	744	122	--	--	--	--	--	--	50	9	--	--	6	137
Basswood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tupelo	524	86	--	--	--	--	--	--	25	5	--	--	--	91
Black cherry	234	37	--	--	--	--	--	--	--	--	--	--	--	37
Cottonwood	129	18	--	--	--	--	--	--	--	--	--	--	--	18
Elm	727	115	--	--	--	--	--	--	--	--	--	--	--	115
Pecan	261	42	--	--	--	--	--	--	--	--	--	--	--	42
Hickory	15,174	2,498	--	--	--	--	3,582	250	100	17	--	--	96	2,861
Hard maple	1,397	227	--	--	--	--	966	68	10	1	--	--	--	296
Soft maple	464	74	--	--	--	--	--	--	--	--	--	--	--	74
Black oak	94,560	16,833	--	--	--	--	9,660	674	--	--	43	23	15	17,545
Red oak	63,666	11,328	--	--	--	--	2,126	149	315	52	--	--	--	11,529
White oak	65,882	11,726	34	7	--	--	11,361	793	10,494	1,732	12	4	6	14,268
Sweet gum	771	127	--	--	--	--	--	--	--	--	--	--	--	127
Sycamore	1,938	320	--	--	--	--	37	2	--	--	--	--	--	322
Black walnut	256	56	58	10	--	--	--	--	--	--	--	--	--	66
Yellow-poplar	119	19	--	--	--	--	--	--	--	--	--	--	--	19
Other hardwoods	75	12	--	--	--	--	--	--	--	--	--	--	--	12
Total	246,921	43,640	92	17	--	--	27,732	1,936	10,994	1,816	55	27	123	47,559
All Species	276,851	48,896	92	17	--	--	27,732	1,936	10,994	1,816	607	454	123	53,242

(Table 3 continued on next page)

(Table 3 continued)

SOUTHWEST OZARK UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Charcoal		Cooperage		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	3,995	690	--	--	--	--	--	--	--	--	2,730	2,100	--	2,790
Redcedar	3,899	1,056	--	--	--	--	--	--	--	--	--	--	660	1,716
Total	7,894	1,746	--	--	--	--	--	--	--	--	2,730	2,100	660	4,506
HARDWOODS														
Ash	594	95	32	7	--	--	376	26	--	--	--	--	6	134
Basswood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tupelo	45	7	--	--	--	--	--	--	--	--	--	--	--	7
Black cherry	44	6	--	--	--	--	--	--	--	--	--	--	1	7
Cottonwood	30	3	32	8	--	--	--	--	--	--	--	--	--	11
Elm	322	51	--	--	--	--	--	--	--	--	--	--	--	51
Pecan	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hickory	3,997	661	--	--	--	--	3,105	216	--	--	--	--	56	933
Hard maple	14	1	--	--	--	--	966	68	--	--	--	--	--	69
Soft maple	51	8	--	--	--	--	--	--	--	--	--	--	--	8
Black oak	37,283	6,636	81	19	--	--	13,690	958	--	--	326	186	577	8,376
Red oak	19,429	3,454	98	22	--	--	830	58	--	--	241	138	--	3,672
White oak	18,319	3,258	74	16	--	--	8,809	618	2,944	482	162	93	332	4,799
Sweet gum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	2,148	353	--	--	--	--	752	52	--	--	--	--	--	405
Black walnut	1,478	323	296	64	--	--	376	26	--	--	--	--	3	416
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	417	67	--	--	--	--	--	--	--	--	--	--	--	67
Total	84,171	14,923	613	136	--	--	28,904	2,022	2,944	482	729	417	975	18,955
All Species	92,065	16,669	613	136	--	--	28,904	2,022	2,944	482	3,459	2,517	1,635	23,461

(Table 3 continued on next page)

(Table 3 continued)

NORTHWEST OZARK UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Charcoal		Cooperage		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	167	27	--	--	--	--	--	--	--	--	36	27	--	54
Redcedar	571	154	--	--	--	--	380	26	--	--	--	--	401	581
Total	738	181	--	--	--	--	380	26	--	--	36	27	401	635
HARDWOODS														
Ash	569	91	11	1	--	--	390	26	--	--	--	--	8	126
Basswood	2	--	--	--	--	--	--	--	--	--	--	--	--	--
Birch	4	--	--	--	--	--	--	--	--	--	--	--	--	--
Tupelo	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cherry	6	1	--	--	--	--	--	--	--	--	--	--	--	1
Cottonwood	143	19	--	--	--	--	--	--	--	--	--	--	6	25
Elm	71	11	--	--	--	--	390	26	--	--	--	--	--	37
Pecan	149	24	--	--	--	--	--	--	--	--	--	--	--	24
Hickory	712	115	--	--	--	--	1,025	72	--	--	--	--	2	189
Hard maple	11	1	--	--	--	--	--	--	--	--	--	--	--	1
Soft maple	377	61	--	--	--	--	--	--	--	--	--	--	11	72
Black oak	9,260	1,644	1	--	--	--	2,001	137	--	--	2	--	--	1,781
Red oak	6,099	1,086	34	7	--	--	2,101	145	--	--	--	--	--	1,238
White oak	10,662	1,902	81	20	--	--	2,403	167	1,790	293	15	8	--	2,390
Sweet gum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	1,895	309	--	--	--	--	390	26	--	--	--	--	7	342
Black walnut	1,498	328	435	91	--	--	--	--	--	--	--	--	30	449
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	110	18	--	--	--	--	--	--	--	--	--	--	6	24
Total	31,568	5,610	562	119	--	--	8,700	599	1,790	293	17	8	70	6,699
All Species	32,306	5,791	562	119	--	--	9,080	625	1,790	293	53	35	471	7,334

(Table 3 continued on next page)

(Table 3 continued)

PRAIRIE UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Charcoal		Cooperage		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cypress	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Shortleaf pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Redcedar	21	4	--	--	--	--	--	--	--	--	--	--	107	111
Total	21	4	--	--	--	--	--	--	--	--	--	--	107	111
HARDWOODS														
Ash	2,377	384	110	21	4	--	--	--	--	--	--	--	48	453
Basswood	339	48	2	--	8	--	--	--	--	--	--	--	7	55
Birch	165	21	--	--	--	--	--	--	--	--	--	--	--	21
Tupelo	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cherry	15	1	--	--	--	--	--	--	--	--	--	--	--	1
Cottonwood	9,872	1,388	226	49	2,171	172	--	--	--	--	--	--	155	1,764
Elm	597	90	--	--	19	1	--	--	--	--	--	--	13	104
Pecan	558	85	--	--	--	--	--	--	--	--	--	--	--	85
Hickory	2,445	396	--	--	26	--	--	--	--	--	--	--	84	481
Hard maple	543	87	--	--	--	--	--	--	--	--	--	--	--	87
Soft maple	8,990	1,468	24	4	1,052	83	--	--	--	--	--	--	145	1,700
Black oak	8,609	1,525	19	4	13	--	--	--	--	--	--	--	39	1,568
Red oak	13,313	2,359	470	107	19	1	--	--	--	--	--	--	62	2,529
White oak	15,528	2,757	1,815	419	52	2	--	--	3,664	599	--	--	363	4,140
Sweet gum	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sycamore	4,469	727	--	--	523	39	--	--	--	--	--	--	28	794
Black walnut	12,520	2,741	2,712	583	4	--	--	--	--	--	--	--	17	3,341
Yellow-poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	635	94	7	--	29	1	--	--	--	--	2	1	40	136
Total	80,975	14,171	5,385	1,187	3,920	300	--	--	3,664	599	2	1	1,001	17,259
All Species	80,996	14,175	5,385	1,187	3,920	300	--	--	3,664	599	2	1	1,108	17,370

(Table 3 continued on next page)

(Table 3 continued)

RIVERBORDER UNIT

Species group	Saw logs		Veneer logs		Pulpwood		Charcoal		Cooperage		Posts		Other products	All products
	MBF 2/	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*Cords 4/*	*MCF 3/*	*MBF 2/*	*MCF 3/*	*Thou. pieces*	*MCF 3/*	*MCF 3/*	*MCF 3/*
SOFTWOODS														
Cypress	50	8	--	--	--	--	--	--	--	--	--	--	--	8
Shortleaf pine	429	73	--	--	464	37	--	--	--	--	--	--	391	501
Redcedar	818	220	--	--	--	--	20	1	--	--	1	--	160	381
Total	1,297	301	--	--	464	37	20	1	--	--	1	--	551	890
Ash	813	131	31	7	--	--	35	1	50	9	--	--	977	1,125
Basswood	7	1	--	--	--	--	--	--	--	--	--	--	--	1
Birch	34	6	--	--	--	--	--	--	--	--	--	--	--	6
Tupelo	45	7	--	--	--	--	--	--	25	5	--	--	--	12
Black cherry	94	14	--	--	--	--	--	--	--	--	--	--	--	14
Cottonwood	6,509	916	--	--	2,536	196	--	--	--	--	--	--	--	1,112
Elm	196	30	--	--	--	--	35	1	--	--	--	--	--	31
Pecan	17	1	--	--	--	--	--	--	--	--	--	--	--	1
Hickory	1,548	252	--	--	408	32	95	6	100	17	--	--	824	1,131
Hard maple	380	58	--	--	--	--	--	--	10	1	--	--	--	59
Soft maple	1,134	182	--	--	1,145	89	--	--	--	--	--	--	393	664
Black oak	4,101	727	--	--	653	51	275	19	--	--	--	--	1,569	2,366
Red oak	14,454	2,570	24	4	490	38	155	11	315	52	--	--	990	3,665
White oak	12,118	2,155	629	144	326	25	550	38	9,241	1,522	--	--	725	4,609
Sweet gum	393	61	--	--	--	--	--	--	--	--	--	--	--	61
Sycamore	1,992	325	2	--	1,147	89	35	1	--	--	--	--	3	418
Black walnut	1,642	353	187	39	--	--	--	--	--	--	--	--	--	392
Yellow-poplar	477	78	--	--	--	--	--	--	--	--	--	--	--	78
Other hardwoods	102	16	8	1	4,737	374	--	--	--	--	1	--	2,959	3,350
Total	46,056	7,883	881	195	11,442	894	1,180	77	9,741	1,606	1	--	8,440	19,095
All Species	47,353	8,184	881	195	11,906	931	1,200	78	9,741	1,606	2	--	8,991	19,985

1/ Based on factors obtained from the Missouri Logging Utilization Study, 1987.

2/ Thousand board feet, International 1/4-inch rule.

3/ Thousand cubic feet.

4/ Standard cords are 128 cubic feet consisting of 79 cubic feet of wood and 49 cubic feet of bark and air space.

Table 4.-- Material harvested for industrial roundwood by source of material and species group, Missouri, 1991 1/

(In thousand cubic feet)

Species group	Growing stock				Nongrowing stock							Total material used for products	Total material not used	Total material harvested
	Used for products		Residue		Used for products									
	Saw-timber	Pole-timber	(not used)	TOTAL	Limb-wood	Sap-lings	Cull trees	Dead trees	Non-forestland	Not used	TOTAL			
SOFTWOODS														
Cypress	8	--	1	9	--	--	--	--	--	4	4	8	5	13
Shortleaf pine	6,567	1,330	774	8,671	107	670	56	135	--	2,851	3,819	8,865	3,625	12,490
Redcedar	1,628	950	291	2,869	82	4	284	2	2	818	1,192	2,952	1,109	4,061
Total	8,203	2,280	1,066	11,549	189	674	340	137	2	3,673	5,015	11,825	4,739	16,564
HARDWOODS														
Ash	1,641	119	375	2,135	4	--	88	--	123	549	764	1,975	924	2,899
Basswood	50	--	18	68	--	--	--	--	6	36	42	56	54	110
Birch	25	--	9	34	--	--	--	--	2	18	20	27	27	54
Tupelo	85	3	32	120	--	--	8	--	14	64	86	110	96	206
Black cherry	50	--	19	69	--	--	3	--	7	39	49	60	58	118
Cottonwood	2,573	29	396	2,998	237	--	90	1	--	1,114	1,442	2,930	1,510	4,440
Elm	260	7	94	361	1	--	27	--	43	202	273	338	296	634
Pecan	122	1	51	174	--	--	7	--	22	105	134	152	156	308
Hickory	4,038	289	1,428	5,755	68	1	588	--	611	2,581	3,849	5,595	4,009	9,604
Hard maple	310	33	121	464	8	--	99	--	62	249	418	512	370	882
Soft maple	1,994	81	620	2,695	43	--	143	--	257	1,186	1,629	2,518	1,806	4,324
Black oak	24,838	1,216	5,923	31,977	488	15	4,401	542	136	13,074	18,656	31,636	18,997	50,633
Red oak	18,416	658	4,484	23,558	310	6	2,798	407	38	9,940	13,499	22,633	14,424	37,057
White oak	24,253	964	5,849	31,066	408	11	4,023	433	114	10,468	15,457	30,206	16,317	46,523
Sweet gum	146	2	61	209	1	--	11	--	28	125	165	188	186	374
Sycamore	1,687	50	653	2,390	38	--	201	--	305	1,349	1,893	2,281	2,002	4,283
Black walnut	1,971	9	286	2,266	1	--	1,974	--	709	766	3,450	4,664	1,052	5,716
Yellow-poplar	76	1	31	108	--	--	6	--	14	64	84	97	95	192
Other hardwoods	3,131	290	352	3,773	64	--	72	2	30	144	312	3,589	496	4,085
Total	85,666	3,752	20,802	110,220	1,671	33	14,539	1,385	2,521	42,073	62,222	109,567	62,875	172,442
All species	93,869	6,032	21,868	121,769	1,860	707	14,879	1,522	2,523	45,746	67,237	121,392	67,614	189,006

1/ Factors for determining the amount of wood in each category are based on the Missouri Logging Utilization Study, 1987

Table 5.--Post production from roundwood by Forest Survey Unit and species group, Missouri, 1991

(In thousand pieces)

Species group	All units	Forest Survey Unit: Eastern Ozark	Southwest Ozark	Northwest Ozark	Prairie	Riverborder
Shortleaf pine	3,318	552	2,730	36	--	--
Redcedar	1	--	--	--	--	1
Black oak	371	43	326	2	--	--
Red oak	241	--	241	--	--	--
White oak	189	12	162	15	--	--
Other hardwoods	3	--	--	--	2	1
All species	4,123	607	3,459	53	2	2

Table 6.-- Charcoal production from roundwood by Forest Survey Unit and species group, Missouri, 1991

(In thousand cubic feet)

Species group	All units	Forest Survey Unit: Eastern Ozark	Southwest Ozark	Northwest Ozark	Prairie	Riverborder
Redcedar	27	--	--	26	--	1
Ash	53	--	26	26	--	1
Elm	27	--	--	26	--	1
Hickory	544	250	216	72	--	6
Hard maple	136	68	68	--	--	--
Black oak	1,788	674	958	137	--	19
Red oak	363	149	58	145	--	11
White oak	1,616	793	618	167	--	38
Sycamore	81	2	52	26	--	1
Black walnut	26	--	26	--	--	--
All species	4,661	1,936	2,022	599	--	77

Table 7.-- Lumber production by Forest Survey Unit for softwoods and hardwoods, Missouri, 1991

(In thousand board feet) 1/

Species group	All units	Forest Survey Unit: Eastern Ozark	Southwest Ozark	Northwest Ozark	Prairie	Riverborder
Softwoods	40,950	28,702	10,795	548	29	876
Hardwoods	527,057	256,739	84,923	23,751	94,477	67,167
All species	568,007	285,441	95,718	24,299	94,506	68,043

1/ International 1/4-inch rule.

Table 8.-- Pulpwood production in Missouri by species group, 1965, 1970, 1975, 1980, 1987, and 1991

(In standard cords, unpeeled)

Species group	1965	1970	1975	1980	1987	1991
ROUNDWOOD						
Softwood	253	301	187	766	--	464
Soft hardwoods	17,299	15,753	12,955	9,937	22,408	10,146
Hard hardwoods	2,427	9,714	9,854	13,981	6,085	5,216
Total	19,979	25,768	22,996	24,684	28,493	15,826
RESIDUE						
Softwood	--	626	4,540	2,324	3,755	3,285
Hardwood	2,146	55,725	88,782	78,427	78,961	68,177
All material	22,125	82,119	116,318	105,435	111,209	87,288

Table 9.-- Pulpwood production by Forest Survey Unit and species group, Missouri, 1991

(In standard cords, unpeeled)

Species group	All units	Eastern Ozark	Southwest Ozark	Northwest Ozark	Prairie	Riverborder
ROUNDWOOD 2/						
Shortleaf pine	464	--	--	--	--	464
Ash	4	--	--	--	4	--
Basswood	8	--	--	--	8	--
Cottonwood	4,707	--	--	--	2,171	2,536
Elm	19	--	--	--	19	--
Hickory	434	--	--	--	26	408
Soft maple	2,197	--	--	--	1,052	1,145
Black oak	666	--	--	--	13	653
Red oak	509	--	--	--	19	490
White oak	378	--	--	--	52	326
Sycamore	1,670	--	--	--	523	1,147
Black walnut	4	--	--	--	4	--
Other hardwoods	4,766	--	--	--	29	4,737
Total	15,826	--	--	--	3,920	11,906

1/ Includes chips from roundwood.

Table 10.--Saw-log production and receipts in Missouri by species group, 1987 and 1991

(In thousand board feet) 1/

Species group	Production			Receipts		
	1987	1991	Change	1987	1991	Change
SOFTWOODS						
Cypress	361	50	-311	370	--	-370
Shortleaf pine	37,256	33,915	-3,341	37,366	33,915	-3,451
Redcedar	4,542	5,915	1,373	4,691	7,034	2,343
Total	42,159	39,880	-2,279	42,427	40,949	-1,478
HARDWOODS						
Ash	4,976	5,097	121	6,338	6,385	47
Basswood	324	348	24	441	549	108
Beech	100	--	-100	286	168	-118
Birch	281	203	-78	299	205	-94
Tupelo	611	614	3	611	613	2
Black cherry	302	393	91	360	583	223
Cottonwood	21,423	16,683	-4,740	25,305	21,270	-4,035
Elm	1,876	1,913	37	1,944	2,012	68
Pecan	212	985	773	281	959	678
Other hickory	16,596	23,876	7,280	17,759	24,364	6,605
Hard maple	1,818	2,345	527	2,065	3,127	1,062
Soft maple	13,123	11,016	-2,107	14,437	11,916	-2,521
Black oak	110,799	153,813	43,014	111,562	155,397	43,835
Red oak	154,945	116,961	-37,984	168,575	133,964	-34,611
White oak	108,594	122,509	13,915	116,797	131,334	14,537
Sweetgum	2,074	1,164	-910	2,091	1,038	-1,053
Sycamore	10,466	12,442	1,976	11,578	13,485	1,907
Black walnut	8,738	17,394	8,656	11,503	16,751	5,248
Yellow-poplar	1,890	596	-1,294	3,308	1,442	-1,866
Other hardwoods	1,256	1,339	83	1,580	1,547	-33
Total	460,404	489,691	29,287	497,120	527,109	29,989
All species	502,563	529,571	27,008	539,547	568,058	28,511

1/ International 1/4-inch rule.

Table 11.--Saw-log production by Forest Survey Unit, species group, and State of destination, Missouri, 1991

(Thousand board feet) 1/

Species	Total	Missouri	Iowa	Kansas	Arkansas	Other States
ALL UNITS						
SOFTWOODS						
Cypress	50	--	--	--	50	--
Shortleaf pine	33,915	33,915	--	--	--	--
Redcedar	5,915	5,915	--	--	--	--
Total	39,880	39,830	--	--	50	--
HARDWOODS						
Ash	5,097	5,036	8	--	28	25
Basswood	348	319	29	--	--	--
Birch	203	203	--	--	--	--
Tupelo	614	613	--	--	1	--
Black cherry	393	392	--	--	--	1
Cottonwood	16,683	16,627	21	35	--	--
Elm	1,913	1,913	--	--	--	--
Pecan	985	956	25	--	1	3
Hickory	23,876	23,690	7	--	179	--
Hard maple	2,345	2,345	--	--	--	--
Soft maple	11,016	10,690	71	--	200	55
Black oak	153,813	153,358	17	--	387	51
Red oak	116,961	115,812	426	--	640	83
White oak	122,509	121,420	608	15	330	136
Sweet gum	1,164	1,036	--	--	101	27
Sycamore	12,442	12,278	4	--	160	--
Black walnut	17,394	13,186	16	4,150	1	41
Yellow-poplar	596	596	--	--	--	--
Other hardwoods	1,339	1,339	--	--	--	--
Total	489,691	482,082	1,232	4,200	2,028	422
All species	529,571	521,912	1,232	4,200	2,078	422
EASTERN OZARK UNIT						
SOFTWOODS						
Cypress	--	--	--	--	--	--
Shortleaf pine	29,324	29,324	--	--	--	--
Redcedar	606	606	--	--	--	--
Total	29,930	29,930	--	--	--	--
HARDWOODS						
Ash	744	744	--	--	--	--
Basswood	--	--	--	--	--	--
Birch	--	--	--	--	--	--
Tupelo	524	523	--	--	1	--
Black cherry	234	234	--	--	--	--
Cottonwood	129	129	--	--	--	--
Elm	727	727	--	--	--	--
Pecan	261	260	--	--	1	--
Hickory	15,174	15,023	--	--	151	--
Hard maple	1,397	1,397	--	--	--	--
Soft maple	464	264	--	--	200	--
Black oak	94,560	94,228	--	--	332	--
Red oak	63,666	63,274	--	--	392	--
White oak	65,882	65,635	--	--	247	--
Sweet gum	771	670	--	--	101	--
Sycamore	1,938	1,888	--	--	50	--
Black walnut	256	255	--	--	1	--
Yellow-poplar	119	119	--	--	--	--
Other hardwoods	75	75	--	--	--	--
Total	246,921	245,445	--	--	1,476	--
All species	276,851	275,375	--	--	1,476	--

(Table 11 continued on next page)

(Table 11 continued)

Species	Total	Missouri	Iowa	Kansas	Arkansas	Other States
SOUTHWEST OZARK UNIT						
SOFTWOODS						
Cypress	--	--	--	--	--	--
Shortleaf pine	3,995	3,995	--	--	--	--
Redcedar	3,899	3,899	--	--	--	--
Total	7,894	7,894	--	--	--	--
HARDWOODS						
Ash	594	566	--	--	28	--
Basswood	--	--	--	--	--	--
Birch	--	--	--	--	--	--
Tupelo	45	45	--	--	--	--
Black cherry	44	44	--	--	--	--
Cottonwood	30	30	--	--	--	--
Elm	322	322	--	--	--	--
Pecan	--	--	--	--	--	--
Hickory	3,997	3,969	--	--	28	--
Hard maple	14	14	--	--	--	--
Soft maple	51	51	--	--	--	--
Black oak	37,283	37,228	--	--	55	--
Red oak	19,429	19,181	--	--	248	--
White oak	18,319	18,236	--	--	83	--
Sweet gum	--	--	--	--	--	--
Sycamore	2,148	2,038	--	--	110	--
Black walnut	1,478	1,478	--	--	--	--
Yellow-poplar	--	--	--	--	--	--
Other hardwoods	417	417	--	--	--	--
Total	84,171	83,619	--	--	552	--
All species	92,065	91,513	--	--	552	--
NORTHWEST OZARK UNIT						
SOFTWOODS						
Cypress	--	--	--	--	--	--
Shortleaf pine	167	167	--	--	--	--
Redcedar	571	571	--	--	--	--
Total	738	738	--	--	--	--
HARDWOODS						
Ash	569	569	--	--	--	--
Basswood	2	2	--	--	--	--
Birch	4	4	--	--	--	--
Tupelo	--	--	--	--	--	--
Black cherry	6	6	--	--	--	--
Cottonwood	143	143	--	--	--	--
Elm	71	71	--	--	--	--
Pecan	149	149	--	--	--	--
Hickory	712	712	--	--	--	--
Hard maple	11	11	--	--	--	--
Soft maple	377	377	--	--	--	--
Black oak	9,260	9,260	--	--	--	--
Red oak	6,099	6,099	--	--	--	--
White oak	10,662	10,662	--	--	--	--
Sweet gum	--	--	--	--	--	--
Sycamore	1,895	1,895	--	--	--	--
Black walnut	1,498	1,291	--	207	--	--
Yellow-poplar	--	--	--	--	--	--
Other hardwoods	110	110	--	--	--	--
Total	31,568	31,361	--	207	--	--
All species	32,306	32,099	--	207	--	--

(Table 11 continued on next page)

(Table 11 continued)

Species	Total	Missouri	Iowa	Kansas	Arkansas	Other States
			PRAIRIE UNIT			
SOFTWOODS						
Cypress	--	--	--	--	--	--
Shortleaf pine	--	--	--	--	--	--
Redcedar	21	21	--	--	--	--
Total	21	21	--	--	--	--
HARDWOODS						
Ash	2,377	2,369	8	--	--	--
Basswood	339	310	29	--	--	--
Birch	165	165	--	--	--	--
Tupelo	--	--	--	--	--	--
Black cherry	15	14	--	--	--	1
Cottonwood	9,872	9,816	21	35	--	--
Elm	597	597	--	--	--	--
Pecan	558	533	25	--	--	--
Hickory	2,445	2,438	7	--	--	--
Hard maple	543	543	--	--	--	--
Soft maple	8,990	8,864	71	--	--	55
Black oak	8,609	8,592	17	--	--	--
Red oak	13,313	12,887	426	--	--	--
White oak	15,528	14,905	608	15	--	--
Sweet gum	--	--	--	--	--	--
Sycamore	4,469	4,465	4	--	--	--
Black walnut	12,520	8,520	16	3,943	--	41
Yellow-poplar	--	--	--	--	--	--
Other hardwoods	635	635	--	--	--	--
Total	80,975	75,653	1,232	3,993	--	97
All species	80,996	75,674	1,232	3,993	--	97
			RIVERBORDER UNIT			
SOFTWOODS						
Cypress	50	--	--	--	50	--
Shortleaf pine	429	429	--	--	--	--
Redcedar	818	818	--	--	--	--
Total	1,297	1,247	--	--	50	--
HARDWOODS						
Ash	813	788	--	--	--	25
Basswood	7	7	--	--	--	--
Birch	34	34	--	--	--	--
Tupelo	45	45	--	--	--	--
Black cherry	94	94	--	--	--	--
Cottonwood	6,509	6,509	--	--	--	--
Elm	196	196	--	--	--	--
Pecan	17	14	--	--	--	3
Hickory	1,548	1,548	--	--	--	--
Hard maple	380	380	--	--	--	--
Soft maple	1,134	1,134	--	--	--	--
Black oak	4,101	4,050	--	--	--	51
Red oak	14,454	14,371	--	--	--	83
White oak	12,118	11,982	--	--	--	136
Sweet gum	393	366	--	--	--	27
Sycamore	1,992	1,992	--	--	--	--
Black walnut	1,642	1,642	--	--	--	--
Yellow-poplar	477	477	--	--	--	--
Other hardwoods	102	102	--	--	--	--
Total	46,056	45,731	--	--	--	325
All species	47,353	46,978	--	--	50	325

1/ International 1/4-inch rule.

Table 12.--Saw-log production by Forest Survey Unit, county, and species group, Missouri, 1991

(In thousand board feet) 1/

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
EASTERN OZARK UNIT												
Bollinger	--	1,000	--	119	--	--	73	61	--	50	--	701
Butler	--	1,350	--	47	--	--	13	--	6	43	9	673
Carter	--	3,564	--	--	--	--	29	--	8	19	1	1,399
Crawford	--	507	--	--	--	--	--	--	--	10	--	264
Dent	--	504	--	--	--	--	10	--	--	--	--	753
Iron	--	480	98	--	--	--	--	--	--	--	--	748
Madison	--	1,445	--	40	--	--	100	16	--	5	--	779
Oregon	--	1,893	--	--	--	--	--	155	--	22	--	675
Reynolds	--	4,609	86	--	--	--	60	--	--	50	--	2,866
Ripley	--	2,489	--	210	--	--	--	--	13	274	250	1,483
St Francois	--	80	242	--	--	--	--	2	2	2	--	33
Shannon	--	4,098	--	--	--	--	230	--	--	20	--	2,096
Washington	--	3,275	180	--	--	--	--	--	--	100	--	566
Wayne	--	4,030	--	328	--	--	9	--	100	132	1	2,138
Total	--	29,324	606	744	--	--	524	234	129	727	261	15,174
SOUTHWEST OZARK UNIT												
Barry	--	--	230	87	--	--	--	12	10	11	--	78
Christian	--	48	125	51	--	--	--	2	--	0	--	159
Douglas	--	329	96	65	--	--	15	15	--	27	--	991
Howell	--	1,692	--	24	--	--	--	--	--	--	--	757
Mcdonald	--	--	--	81	--	--	--	4	10	84	--	230
Newton	--	--	--	64	--	--	--	3	10	24	--	148
Ozark	--	228	1,058	--	--	--	--	--	--	18	--	276
Stone	--	--	655	33	--	--	--	1	--	--	--	4
Taney	--	--	1,720	15	--	--	--	--	--	--	--	4
Texas	--	1,661	--	9	--	--	30	4	--	20	--	647
Webster	--	--	--	18	--	--	--	3	--	46	--	126
Wright	--	37	15	147	--	--	--	--	--	92	--	554
Total	--	3,995	3,899	594	--	--	45	44	30	322	--	3,997
NORTHWEST OZARK UNIT												
Benton	--	--	8	11	2	2	--	--	24	12	12	18
Camden	--	--	245	13	--	--	--	--	8	6	--	41
Cedar	--	--	--	111	--	--	--	--	--	6	--	6
Dallas	--	--	55	1	--	--	--	5	--	--	--	5
Hickory	--	--	90	50	--	--	--	--	--	--	25	--
Laclede	--	56	48	--	--	--	--	--	--	--	--	95
Maries	--	--	15	63	--	--	--	--	44	6	--	80
Miller	--	--	48	11	--	--	--	--	57	7	--	10
Morgan	--	--	48	14	--	2	--	1	10	12	12	6
Phelps	--	56	--	10	--	--	--	--	--	16	--	381
Polk	--	--	14	--	--	--	--	--	--	--	--	--
Pulaski	--	55	--	85	--	--	--	--	--	6	--	70
St. Clair	--	--	--	200	--	--	--	--	--	--	100	--
Total	--	167	571	569	2	4	--	6	143	71	149	712
PRAIRIE UNIT												
Adair	--	--	--	49	15	15	--	--	43	--	--	131
Andrew	--	--	--	7	21	--	--	--	157	10	11	--
Atchison	--	--	--	--	--	--	--	--	111	--	--	--
Audrain	--	--	--	262	--	14	--	--	139	17	21	30
Barton	--	--	--	317	--	--	--	--	--	110	25	110
Bates	--	--	--	--	--	--	--	--	--	--	--	--
Buchanan	--	--	--	11	11	--	--	--	269	21	17	--
Caldwell	--	--	--	21	25	--	--	--	358	29	26	9
Carroll	--	--	--	59	--	--	--	--	325	--	--	--
Cass	--	--	--	20	--	--	--	--	3	--	--	--
Chariton	--	--	--	38	12	12	--	--	178	3	--	--
Clark	--	--	--	35	1	1	--	--	550	23	--	294
Clay	--	--	--	--	--	--	--	--	110	--	--	--
Clinton	--	--	--	20	15	--	--	--	326	34	15	9

(Table 12 continued on next page)

(Table 12 continued)

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
PRAIRIE UNIT *(continued)*												
Cooper	--	--	--	24	--	--	--	1	32	1	21	--
Dade	--	--	--	161	--	--	--	--	--	4	--	4
Daviess	--	--	--	15	26	--	--	--	475	29	41	3
De Kalb	--	--	--	14	4	1	--	--	234	11	12	7
Gentry	--	--	--	11	11	--	--	--	84	17	18	--
Greene	--	--	--	29	--	--	--	--	--	--	--	--
Grundy	--	--	--	47	15	--	--	--	578	1	13	--
Harrison	--	--	--	23	21	--	--	--	377	33	46	--
Henry	--	--	17	10	--	2	--	--	10	2	--	16
Holt	--	--	--	1	--	--	--	1	475	--	--	--
Jackson	--	--	--	--	--	--	--	--	11	--	--	--
Jasper	--	--	--	4	--	--	--	--	10	4	--	4
Johnson	--	--	--	10	--	2	--	--	10	2	--	6
Knox	--	--	1	61	41	41	--	--	173	12	--	357
Lafayette	--	--	--	11	3	--	--	3	203	29	6	11
Lawrence	--	--	--	85	--	--	--	3	--	--	--	3
Lewis	--	--	--	38	3	3	--	--	280	17	--	170
Lincoln	--	--	--	22	--	--	--	--	38	--	--	--
Linn	--	--	--	206	10	8	--	--	340	1	--	187
Livingston	--	--	--	77	13	--	--	--	643	26	35	--
Macon	--	--	--	57	15	15	--	--	71	--	--	168
Marion	--	--	--	68	15	10	--	--	354	15	--	170
Mercer	--	--	--	--	--	--	--	--	2	--	--	--
Monroe	--	--	--	32	--	14	--	--	645	22	23	80
Nodaway	--	--	--	7	3	--	--	--	156	19	19	--
Pettis	--	--	--	10	--	2	--	--	13	2	--	6
Pike	--	--	2	264	1	--	--	--	171	10	--	70
Platte	--	--	--	1	--	--	--	--	118	--	--	--
Putnam	--	--	--	8	29	--	--	--	17	--	25	--
Ralls	--	--	--	30	3	--	--	--	181	13	--	63
Randolph	--	--	--	40	12	12	--	--	227	3	3	30
Ray	--	--	--	16	1	--	--	--	470	22	11	15
Saline	--	--	--	13	--	--	--	7	424	14	5	13
Schuyler	--	--	--	--	--	--	--	--	--	--	--	--
Scotland	--	--	1	25	--	--	--	--	207	13	--	166
Shelby	--	--	--	21	10	10	--	--	106	6	--	287
Sullivan	--	--	--	8	3	3	--	--	146	--	--	12
Vernon	--	--	--	86	--	--	--	--	--	14	155	14
Worth	--	--	--	3	--	--	--	--	22	8	10	--
Total	--	--	21	2,377	339	165	--	15	9,872	597	558	2,445
RIVERBORDER UNIT												
Boone	--	--	--	47	--	--	--	--	205	--	--	7
Callaway	--	--	100	23	--	--	--	--	148	--	--	--
Cape Girardeau	--	--	--	138	--	--	28	27	66	25	3	217
Cole	--	--	186	48	--	2	--	--	221	1	--	--
Dunklin	50	--	--	2	--	--	--	--	--	16	--	14
Franklin	--	4	19	45	--	--	--	--	664	45	--	307
Gasconade	--	--	5	6	--	6	--	--	306	6	--	337
Howard	--	--	--	14	--	4	--	--	589	1	--	7
Jefferson	--	100	28	25	--	--	--	18	25	--	--	--
Mississippi	--	--	--	1	--	--	--	--	1,126	--	--	--
Moniteau	--	--	41	--	--	--	--	--	1	--	--	--
Montgomery	--	--	101	6	--	--	--	--	127	--	--	--
New Madrid	--	--	--	1	--	--	--	--	869	--	--	--
Osage	--	--	186	67	--	22	--	--	523	23	--	--
Perry	--	--	5	101	1	--	9	21	7	15	11	82
St. Charles	--	--	--	95	1	--	--	1	722	24	--	1
St. Louis	--	--	--	2	1	--	--	--	182	--	--	1
St. Genevieve	--	325	147	13	--	--	--	16	8	8	--	112
Scott	--	--	--	68	--	--	5	5	--	6	3	159
Stoddard	--	--	--	87	--	--	3	2	--	2	--	164
Warren	--	--	--	24	--	--	--	4	720	24	--	140
Total	50	429	818	813	7	34	45	94	6,509	196	17	1,548
State total	50	33,915	5,915	5,097	348	203	614	393	16,683	1,913	985	23,876

(Table 12 continued on next page)

(Table 12 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black walnut	Yellow poplar	Other hardwoods	All species
EASTERN OZARK UNIT											
Bollinger	271	43	1,630	3,837	4,023	119	274	27	92	--	12,320
Butler	35	44	1,833	1,391	1,789	4	48	--	--	75	7,360
Carter	--	9	5,605	2,109	5,897	--	28	--	--	--	18,668
Crawford	186	--	10,931	1,793	3,064	--	54	--	--	--	16,809
Dent	--	12	11,114	2,447	4,993	--	52	78	--	--	19,963
Iron	150	--	5,576	3,287	2,670	--	324	--	--	--	13,333
Madison	43	5	1,638	2,804	2,455	--	78	17	25	--	9,450
Oregon	--	--	3,677	6,790	2,795	--	371	9	--	--	16,387
Reynolds	--	--	9,666	15,980	7,959	360	--	--	--	--	41,636
Ripley	293	225	10,924	945	6,231	283	295	38	--	--	23,953
St Francois	6	4	321	50	137	--	28	4	--	--	911
Shannon	--	5	15,308	6,363	8,672	--	125	82	--	--	36,999
Washington	178	--	3,682	8,101	3,897	--	170	--	--	--	20,149
Wayne	235	117	12,655	7,769	11,300	5	91	1	2	--	38,913
Total	1,397	464	94,560	63,666	65,882	771	1,938	256	119	75	276,851
SOUTHWEST OZARK UNIT											
Barry	--	13	1,656	847	762	--	297	94	--	40	4,137
Christian	--	--	2,778	490	800	--	--	101	--	62	4,616
Douglas	--	--	7,531	114	2,849	--	110	49	--	27	12,218
Howell	--	--	7,379	6,162	4,036	--	203	90	--	--	20,343
Mcdonald	11	25	1,046	4,393	1,799	--	534	77	--	62	8,356
Newton	3	13	481	1,772	606	--	307	88	--	69	3,588
Ozark	--	--	2,398	157	569	--	18	--	--	18	4,740
Stone	--	--	385	1,061	572	--	19	597	--	1	3,328
Taney	--	--	796	139	290	--	--	22	--	--	2,986
Texas	--	--	5,767	4,107	3,413	--	321	189	--	--	16,168
Webster	--	--	1,424	82	596	--	69	135	--	46	2,545
Wright	--	--	5,642	105	2,027	--	270	36	--	92	9,040
Total	14	51	37,283	19,429	18,319	--	2,148	1,478	--	417	92,065
NORTHWEST OZARK UNIT											
Benton	--	12	91	195	258	--	58	126	--	--	829
Camden	8	17	765	866	1,180	--	229	18	--	--	3,396
Cedar	--	6	565	3	211	--	6	297	--	--	1,211
Dallas	--	--	275	37	256	--	44	51	--	--	729
Hickory	--	25	276	53	308	--	25	59	--	--	911
Laclede	--	--	1,101	144	1,589	--	66	66	--	--	3,165
Maries	--	53	372	724	857	--	89	126	--	40	2,469
Miller	3	15	195	484	520	--	49	3	--	--	1,402
Morgan	--	47	40	188	215	--	82	7	--	--	684
Phelps	--	72	3,554	1,457	2,855	--	304	47	--	70	8,822
Polk	--	--	479	509	323	--	3	489	--	--	1,817
Pulaski	--	30	1,447	1,233	1,887	--	840	54	--	--	5,707
St. Ciair	--	100	100	206	203	--	100	155	--	--	1,164
Total	11	377	9,260	6,099	10,662	--	1,895	1,498	--	110	32,306
PRAIRIE UNIT											
Adair	--	196	131	321	352	--	28	17	--	21	1,319
Andrew	--	69	--	22	66	--	11	326	--	1	701
Atchison	--	3	--	15	22	--	--	53	--	--	204
Audrain	16	806	969	1,016	1,053	--	530	573	--	18	5,464
Barton	--	135	1,640	78	379	--	135	419	--	0	3,348
Bates	--	250	--	77	61	--	--	129	--	4	521
Buchanan	--	19	--	26	87	--	12	347	--	1	821
Caldwell	--	59	2	102	149	--	71	485	--	19	1,355
Carroll	--	474	3	28	72	--	--	156	--	48	1,165
Cass	--	250	--	61	59	--	2	231	--	3	629
Chariton	12	224	142	437	248	--	103	579	--	1	1,989
Clark	--	153	614	427	1,021	--	252	11	--	81	3,463
Clay	--	7	--	18	20	--	--	53	--	--	208
Clinton	--	41	--	47	81	--	23	346	--	19	976

(Table 12 continued on next page)

(Table 12 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black walnut	Yellow poplar	Other hardwoods	All species
PRAIRIE UNIT *(continued)*											
Cooper	--	88	10	266	283	--	88	642	--	3	1,459
Dade	--	4	972	204	412	--	4	898	--	--	2,663
Daviess	--	50	3	166	257	--	101	274	--	6	1,446
De Kalb	--	158	7	34	89	--	4	114	--	1	690
Gentry	--	19	--	39	94	--	14	387	--	1	695
Greene	--	--	276	620	349	--	--	1,471	--	--	2,745
Grundy	--	458	1	104	143	--	80	57	--	32	1,529
Harrison	--	390	--	1,011	1,083	--	61	662	--	--	3,707
Henry	--	19	61	121	219	--	59	169	--	3	708
Holt	--	14	--	36	42	--	--	274	--	--	843
Jackson	--	1	--	12	17	--	9	299	--	1	350
Jasper	--	14	32	63	76	--	4	156	--	--	367
Johnson	--	20	40	76	69	--	46	49	--	3	333
Knox	--	505	344	536	693	--	164	10	--	54	2,992
Lafayette	--	36	3	83	107	--	91	96	--	24	706
Lawrence	--	--	683	161	334	--	41	520	--	3	1,833
Lewis	6	152	194	208	538	--	207	69	--	3	1,888
Lincoln	21	20	--	51	123	--	68	--	--	17	360
Linn	7	697	96	624	503	--	134	424	--	36	3,273
Livingston	--	553	3	120	199	--	63	60	--	48	1,840
Macon	--	203	171	389	374	--	61	25	--	22	1,571
Marion	24	358	258	557	728	--	282	5	--	32	2,876
Mercer	--	4	--	17	45	--	--	--	--	--	68
Monroe	275	652	446	1,203	1,006	--	540	19	--	--	4,957
Nodaway	--	7	--	40	76	--	3	53	--	--	383
Pettis	--	82	40	167	161	--	65	94	--	3	645
Pike	144	257	88	953	807	--	161	174	--	18	3,120
Platte	--	18	--	18	31	--	--	319	--	1	506
Putnam	--	33	10	67	113	--	3	23	--	--	328
Ralls	19	70	102	187	265	--	131	--	--	1	1,065
Randolph	15	471	233	1,216	1,158	--	162	432	--	17	4,031
Ray	--	59	3	115	141	--	39	278	--	30	1,200
Saline	--	87	4	195	161	--	88	417	--	29	1,457
Schuyler	--	1	--	7	8	--	--	15	--	--	31
Scotland	--	98	242	24	91	--	149	13	--	14	1,043
Shelby	4	108	375	350	389	--	252	--	--	14	1,932
Sullivan	--	180	18	116	381	--	1	19	--	3	890
Vernon	--	414	393	463	250	--	124	278	--	--	2,191
Worth	--	4	--	19	43	--	3	--	--	--	112
Total	543	8,990	8,609	13,313	15,528	--	4,469	12,520	--	635	80,996
RIVERBORDER UNIT											
Boone	3	97	337	420	433	--	92	242	--	--	1,883
Callaway	13	16	150	188	188	--	28	14	--	--	868
Cape Girardeau	99	24	491	1,737	1,865	37	29	5	257	1	5,049
Cole	2	65	323	419	420	--	109	4	--	--	1,800
Dunklin	--	18	91	104	59	18	18	--	--	--	390
Franklin	16	45	377	788	685	--	155	38	--	45	3,233
Gasconade	6	6	300	1,155	1,092	--	152	16	--	--	3,393
Howard	7	401	62	235	218	--	631	609	--	--	2,782
Jefferson	--	--	244	769	517	--	25	16	25	--	1,792
Mississippi	--	43	--	8	8	--	29	--	--	--	1,215
Moniteau	--	8	6	87	143	--	38	407	--	--	731
Montgomery	--	11	91	583	455	--	61	101	--	--	1,536
New Madrid	--	28	--	6	194	114	133	--	--	--	1,345
Osage	22	66	190	1,004	1,016	--	195	--	--	--	3,314
Perry	137	15	201	1,338	1,712	20	22	19	124	8	3,848
St. Charles	1	198	25	688	417	--	37	142	--	24	2,376
St. Louis	1	2	25	202	108	--	1	2	--	1	528
St. Genevieve	24	16	1,052	653	929	--	112	25	12	1	3,453
Scott	6	6	106	769	639	121	6	--	55	--	1,954
Stoddard	43	46	30	791	674	83	82	--	4	--	2,011
Warren	--	23	--	2,510	346	--	37	2	--	22	3,852
Total	380	1,134	4,101	14,454	12,118	393	1,992	1,642	477	102	47,353
State total	2,345	11,016	153,813	116,961	122,509	1,164	12,442	17,394	596	1,339	529,571

1/ International 1/4-inch rule.

Table 13.--Saw-log receipts in Missouri by Forest Survey Unit, species group, and State of origin, 1991

(In thousand board feet) 1/

Species group	ALL UNITS									
	All States	Missouri	Illinois	Arkansas	Iowa	Indiana	Kansas	Nebraska	Kentucky	Other
SOFTWOODS										
Shortleaf pine	33,915	33,915	--	--	--	--	--	--	--	--
Redcedar	7,034	5,915	--	1,119	--	--	--	--	--	--
Total	40,949	39,830	--	1,119	--	--	--	--	--	--
HARDWOODS										
Ash	6,385	5,036	1,320	14	2	--	10	--	--	3
Basswood	549	319	19	--	4	--	92	115	--	--
Beech	168	--	168	--	--	--	--	--	--	--
Birch	205	203	1	--	1	--	--	--	--	--
Tupelo	613	613	--	--	--	--	--	--	--	--
Black cherry	583	392	190	1	--	--	--	--	--	--
Cottonwood	21,270	16,627	1,617	1,117	341	--	114	133	734	587
Elm	2,012	1,913	21	78	--	--	--	--	--	--
Pecan	959	956	--	--	3	--	--	--	--	--
Hickory	24,364	23,690	224	317	28	--	--	--	95	10
Hard maple	3,127	2,345	768	14	--	--	--	--	--	--
Soft maple	11,916	10,690	673	39	197	--	237	30	28	22
Black oak	155,397	153,358	661	729	646	--	--	--	--	3
Red oak	133,964	115,812	10,922	3,936	1,630	1,380	101	10	--	173
White oak	131,334	121,420	6,452	2,324	520	--	30	565	--	23
Sweet gum	1,038	1,036	--	2	--	--	--	--	--	--
Sycamore	13,485	12,278	383	573	189	--	--	--	19	43
Black walnut	16,751	13,186	1,063	454	975	128	461	103	--	381
Yellow-poplar	1,442	596	846	--	--	--	--	--	--	--
Other hardwoods	1,547	1,339	111	93	4	--	--	--	--	--
Total	527,109	481,809	25,439	9,691	4,540	1,508	1,045	956	876	1,245
All species	568,058	521,639	25,439	10,810	4,540	1,508	1,045	956	876	1,245

(Table 13 continued on next page)

(Table 13 continued)

EASTERN OZARK

Species group	All States	Missouri	Arkansas	Illinois	Kentucky
SOFTWOODS					
Shortleaf pine	28,133	28,133	--	--	--
Redcedar	569	569	--	--	--
Total	28,702	28,702	--	--	--
HARDWOODS					
Ash	626	612	14	--	--
Tupelo	568	568	--	--	--
Black cherry	210	210	--	--	--
Cottonwood	169	162	7	--	--
Elm	840	764	76	--	--
Pecan	260	260	--	--	--
Hickory	15,733	15,166	315	157	95
Hard maple	1,429	1,415	14	--	--
Soft maple	247	232	15	--	--
Black oak	96,698	96,106	592	--	--
Red oak	67,602	63,924	3,678	--	--
White oak	68,924	67,220	1,704	--	--
Sweet gum	631	631	--	--	--
Sycamore	2,599	2,068	531	--	--
Black walnut	69	69	--	--	--
Yellow-poplar	68	68	--	--	--
Other hardwoods	75	75	--	--	--
Total	256,748	249,550	6,946	157	95
All species	285,450	278,252	6,946	157	95

SOUTHWEST OZARK

Species group	All States	Missouri	Arkansas	Oklahoma	Kansas	Nebraska	Iowa
SOFTWOODS							
Shortleaf pine	5,777	5,777	--	--	--	--	--
Redcedar	5,018	3,899	1,119	--	--	--	--
Total	10,795	9,676	1,119	--	--	--	--
HARDWOODS							
Ash	548	545	--	3	--	--	--
Tupelo	15	15	--	--	--	--	--
Black cherry	48	47	1	--	--	--	--
Cottonwood	40	40	--	--	--	--	--
Elm	302	302	--	--	--	--	--
Hickory	3,852	3,840	2	10	--	--	--
Hard maple	14	14	--	--	--	--	--
Soft maple	61	61	--	--	--	--	--
Black oak	39,117	38,983	134	--	--	--	--
Red oak	15,894	15,551	209	134	--	--	--
White oak	17,965	17,358	601	6	--	--	--
Sycamore	2,003	1,954	23	26	--	--	--
Black walnut	4,647	3,487	435	362	218	73	72
Other hardwoods	421	420	1	--	--	--	--
Total	84,927	82,617	1,406	541	218	73	72
All species	95,722	92,293	2,525	541	218	73	72

(Table 13 continued on next page)

(Table 13 continued)

NORTHWEST OZARK

Species group	All States	Missouri
SOFTWOODS		
Redcedar	548	548
Total	548	548
HARDWOODS		
Ash	144	144
Basswood	2	2
Black cherry	6	6
Cottonwood	25	25
Elm	60	60
Pecan	24	24
Hickory	594	594
Hard maple	11	11
Soft maple	139	139
Black oak	7,050	7,050
Red oak	5,206	5,206
White oak	8,692	8,692
Sycamore	1,546	1,546
Black walnut	146	146
Other hardwoods	110	110
Total	23,755	23,755
All species	24,303	24,303

PRAIRIE

Species group	All States	Missouri	Illinois	Iowa	Nebraska	Kansas	Indiana	Arkansas	Oklahoma
SOFTWOODS									
Redcedar	29	29	--	--	--	--	--	--	--
Total	29	29	--	--	--	--	--	--	--
HARDWOODS									
Ash	3,748	2,878	858	2	--	10	--	--	--
Basswood	526	314	1	4	115	92	--	--	--
Birch	175	173	1	1	--	--	--	--	--
Black cherry	11	11	--	--	--	--	--	--	--
Cottonwood	10,666	9,757	321	341	133	114	--	--	--
Elm	619	607	12	--	--	--	--	--	--
Pecan	661	658	--	3	--	--	--	--	--
Hickory	2,628	2,551	49	28	--	--	--	--	--
Hard maple	1,064	566	498	--	--	--	--	--	--
Soft maple	10,313	9,246	603	197	30	237	--	--	--
Black oak	9,415	8,552	211	646	--	--	--	3	3
Red oak	20,614	14,411	4,384	1,630	10	101	--	39	39
White oak	20,153	15,823	3,181	520	565	30	--	17	17
Sycamore	5,410	4,885	336	189	--	--	--	--	--
Black walnut	7,787	5,848	597	903	30	243	128	19	19
Other hardwoods	724	632	88	4	--	--	--	--	--
Total	94,514	76,912	11,140	4,468	883	827	128	78	78
All species	94,543	76,941	11,140	4,468	883	827	128	78	78

(Table 13 continued on next page)

(Table 13 continued)

Species group	All States	RIVERBORDER Missouri	Illinois	Indiana	Arkansas	Kentucky	Tennessee
SOFTWOODS							
Shortleaf pine	5	5	--	--	--	--	--
Redcedar	870	870	--	--	--	--	--
Total	875	875	--	--	--	--	--
HARDWOODS							
Ash	1,319	857	462	--	--	--	--
Basswood	21	3	18	--	--	--	--
Beech	168	--	168	--	--	--	--
Birch	30	30	--	--	--	--	--
Tupelo	30	30	--	--	--	--	--
Black cherry	308	118	190	--	--	--	--
Cottonwood	10,370	6,643	1,296	--	1,110	734	587
Elm	191	180	9	--	2	--	--
Pecan	14	14	--	--	--	--	--
Hickory	1,557	1,539	18	--	--	--	--
Hard maple	609	339	270	--	--	--	--
Soft maple	1,156	1,012	70	--	24	28	22
Black oak	3,117	2,667	450	--	--	--	--
Red oak	24,648	16,720	6,538	1,380	10	--	--
White oak	15,600	12,327	3,271	--	2	--	--
Sweetgum	407	405	--	--	2	--	--
Sycamore	1,927	1,825	47	--	19	19	17
Black walnut	4,102	3,636	466	--	--	--	--
Yellow-poplar	1,374	528	846	--	--	--	--
Other hardwoods	217	102	23	--	92	--	--
Total	67,165	48,975	14,142	1,380	1,261	781	626
All species	68,040	49,850	14,142	1,380	1,261	781	626

1/ International 1/4-inch rule.

Table 14.-- Veneer log and bolt production by species group in Missouri, 1987 and 1991

(In thousand board feet) 1/

Species group	1987	1991	Change	Percent change
Ash	610	184	-426	-70%
Basswood	--	2	2	--
Cottonwood	490	258	-232	-47%
Pecan	52	--	-52	-100%
Hard maple	3	--	-3	-100%
Soft maple	--	24	24	--
Black oak	--	101	101	--
Red oak	124	626	502	405%
White oak	2,485	2,633	148	6%
Sycamore	--	2	2	--
Black walnut	964	3,688	2,724	283%
Other hardwoods	--	15	15	--
All species	4,728	7,533	2,805	59%

1/ International 1/4 inch rule.

Table 15.--Veneer log and bolt production in Missouri by species and destination, 1991

(In thousand board feet) 1/

		Destination		
Species group	Total	Missouri	Illinois	Other Countries
Ash	184	182	2	--
Basswood	2	2	--	--
Cottonwood	258	258	--	--
Soft maple	24	24	--	--
Black oak	101	101	--	--
Red oak	626	626	--	--
White oak	2,633	2,539	86	8
Sycamore	2	2	--	--
Black walnut	3,688	3,599	55	34
Other hardwoods	15	15	--	--
All species	7,533	7,348	143	42

1/ International 1/4-inch rule.

Table 16.-- Veneer log and bolt receipts by species group and area of origin, Missouri, 1991

(In thousand board feet) 1/

Species group	All States	Missouri	Iowa	Arkansas	Illinois	Ohio	Penn.	Indiana	Kansas	Nebraska
HARDWOODS										
Ash	234	182	5	--	5	4	4	4	30	--
Basswood	34	2	--	--	--	--	--	--	32	--
Black cherry	56	--	--	--	--	--	56	--	--	--
Cottonwood	1,554	258	108	1,152	--	--	--	--	18	18
Elm	23	--	4	--	4	5	5	5	--	--
Soft maple	31	24	7	--	--	--	--	--	--	--
Black oak	103	101	--	1	--	--	--	1	--	--
Red oak	963	626	136	3	1	--	56	60	59	22
White oak	4,772	2,539	1,283	1	380	284	--	1	171	113
Sycamore	2	2	--	--	--	--	--	--	--	--
Black walnut	4,711	3,599	316	4	76	14	6	28	612	56
Other hardwoods	21	15	--	--	--	--	--	--	6	--
Total	12,504	7,348	1,859	1,161	466	307	127	99	928	209

1/ International 1/4-inch rule.

Table 17.--Growing-stock removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Missouri, 1991

(In thousand cubic feet)

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
EASTERN OZARK UNIT												
Bollinger	--	191	--	31	--	--	13	12	--	8	--	229
Butler	--	257	--	8	--	--	3	--	1	7	1	121
Carter	--	727	--	--	--	--	5	--	1	3	--	250
Crawford	--	99	--	--	--	--	--	--	--	1	--	47
Dent	--	113	--	--	--	--	1	--	--	--	--	159
Iron	--	91	23	--	--	--	--	--	--	--	--	134
Madison	--	275	--	7	--	--	19	3	--	1	--	139
Oregon	--	364	--	--	--	--	--	27	--	4	--	129
Reynolds	--	931	20	--	--	--	11	--	--	8	--	539
Ripley	--	484	--	38	--	--	--	--	2	49	45	307
St. Francois	--	15	58	11	--	--	5	--	--	--	--	26
Shannon	--	935	--	--	--	--	42	--	--	4	--	411
Washington	--	632	44	--	--	--	--	--	--	19	--	102
Wayne	--	769	--	59	--	--	1	--	15	24	--	384
Total	--	5,883	145	154	--	--	100	42	19	128	46	2,977
SOUTHWEST OZARK UNIT												
Barry	--	--	55	28	--	--	--	3	3	2	--	24
Christian	--	9	35	9	--	--	--	--	--	--	--	29
Douglas	--	93	29	12	--	--	3	3	--	4	--	178
Howell	--	361	--	4	--	--	--	--	--	--	--	207
Mcdonald	--	--	--	15	--	--	--	1	4	16	--	42
Newton	--	--	--	14	--	--	--	--	4	4	--	29
Ozark	--	44	696	--	--	--	--	--	--	3	--	50
Stone	--	--	161	8	--	--	--	--	--	--	--	3
Taney	--	--	674	3	--	--	--	--	--	--	--	1
Texas	--	1,676	--	9	--	--	5	1	--	4	--	160
Webster	--	--	--	4	--	--	--	1	--	8	--	25
Wright	--	11	3	26	--	--	--	--	--	17	--	107
Total	--	2,194	1,653	132	--	--	8	9	11	58	--	855
NORTHWEST OZARK UNIT												
Benton	--	--	32	8	--	--	--	--	10	3	3	3
Camden	--	--	124	4	--	--	--	--	1	1	--	7
Cedar	--	--	4	21	--	--	--	--	--	1	--	1
Dallas	--	--	13	--	--	--	--	1	--	--	--	1
Hickory	--	--	80	8	--	--	--	--	--	--	4	2
Laclede	--	10	41	--	--	--	--	--	--	--	--	17
Maries	--	--	29	20	--	--	--	--	7	9	--	34
Miller	--	--	133	2	--	--	--	--	8	1	--	1
Morgan	--	--	47	4	--	--	--	--	1	3	3	1
Phelps	--	10	4	1	--	--	--	--	--	3	--	72
Polk	--	--	7	--	--	--	--	--	--	--	--	--
Pulaski	--	29	60	16	--	--	--	--	--	1	--	14
St. Clair	--	--	4	36	--	--	--	--	--	--	19	--
Total	--	49	578	120	--	--	--	1	27	22	29	153
PRAIRIE UNIT												
Adair	--	--	--	8	3	3	--	--	7	--	--	23
Andrew	--	--	--	1	4	--	--	--	25	1	2	--
Atchison	--	--	--	--	--	--	--	--	16	--	--	--
Audrain	--	--	--	48	--	3	--	--	21	3	4	5
Barton	--	--	--	69	--	--	--	--	--	20	4	25
Bates	--	--	--	1	--	--	--	--	--	--	--	--
Buchanan	--	--	--	2	2	--	--	--	46	4	3	--
Caldwell	--	--	--	4	4	--	--	--	55	5	4	1
Carroll	--	--	--	10	--	--	--	--	61	--	--	--
Cass	--	--	--	5	--	--	--	--	--	--	--	--
Chariton	--	--	--	8	3	3	--	--	27	--	--	--
Clark	--	--	--	16	6	--	--	--	178	15	--	104
Clay	--	--	--	--	--	--	--	--	24	--	--	--
Clinton	--	--	--	4	3	--	--	--	54	6	3	1

(Table17 continued on next page)

(Table 17 continued)

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
PRAIRIE UNIT	*continued*											
Cooper	--	--	26	11	--	--	--	--	44	--	4	--
Dade	--	--	--	30	--	--	--	--	--	1	--	1
Daviess	--	--	--	3	4	--	--	--	72	5	7	--
De Kalb	--	--	--	3	1	--	--	--	37	2	3	1
Gentry	--	--	--	2	2	--	--	--	14	3	3	--
Greene	--	--	--	6	--	--	--	--	--	--	--	--
Grundy	--	--	--	8	3	--	--	--	88	--	3	--
Harrison	--	--	--	4	4	--	--	--	58	6	8	--
Henry	--	--	8	2	--	--	--	--	1	--	--	3
Holt	--	--	--	--	--	--	--	--	72	--	--	--
Jackson	--	--	--	--	--	--	--	--	7	--	--	--
Jasper	--	--	--	2	--	--	--	--	3	1	--	1
Johnson	--	--	26	8	--	--	--	--	7	--	--	1
Knox	--	--	--	12	7	7	--	--	26	3	--	64
Lafayette	--	--	--	2	--	--	--	--	30	5	1	2
Lawrence	--	--	--	17	--	--	--	--	--	--	--	--
Lewis	--	--	--	8	2	--	--	--	86	7	--	39
Lincoln	--	--	--	7	--	--	--	--	6	--	--	6
Linn	--	--	--	37	1	1	--	--	51	--	--	34
Livingston	--	--	--	15	3	--	--	--	100	4	6	--
Macon	--	--	--	10	3	3	--	--	11	--	--	30
Marion	--	--	--	13	3	1	--	--	54	3	--	30
Mercer	--	--	--	--	--	--	--	--	--	--	--	--
Monroe	--	--	--	5	--	3	--	--	98	4	4	15
Nodaway	--	--	--	1	--	--	--	--	24	3	3	--
Pettis	--	--	39	11	--	--	--	--	11	--	--	1
Pike	--	--	--	48	--	--	--	--	26	1	--	13
Platte	--	--	--	--	--	--	--	--	22	--	--	--
Putnam	--	--	--	1	5	--	--	--	2	--	4	--
Ralls	--	--	--	5	--	--	--	--	27	3	--	12
Randolph	--	--	--	7	3	3	--	--	34	--	--	5
Ray	--	--	--	3	--	--	--	--	74	4	2	3
Saline	--	--	24	10	--	--	--	1	145	3	1	3
Schuyler	--	--	--	--	--	--	--	--	--	--	--	--
Scotland	--	--	--	10	--	--	--	--	34	3	--	54
Shelby	--	--	--	4	1	1	--	--	16	1	--	51
Sullivan	--	--	--	1	--	--	--	--	22	--	--	3
Vernon	--	--	--	18	--	--	--	--	--	3	27	3
Worth	--	--	--	--	--	--	--	--	3	1	1	--
Total	--	--	123	500	67	28	--	1	1,819	120	97	534
RIVERBORDER UNIT												
Boone	--	--	4	9	--	--	--	--	31	--	--	1
Callaway	--	--	27	5	--	--	--	--	22	--	--	--
Cape Girardeau	--	463	--	228	--	--	5	4	14	4	--	275
Cole	--	--	64	9	--	--	--	--	33	--	--	--
Dunklin	9	--	--	--	--	--	--	--	--	3	--	3
Franklin	--	1	4	8	--	--	--	--	101	8	--	55
Gasconade	--	--	43	2	--	1	--	--	46	1	--	61
Howard	--	--	--	4	1	1	--	--	143	--	--	1
Jefferson	--	19	7	4	--	--	--	3	4	--	--	--
Mississippi	--	--	--	732	--	--	--	--	192	--	--	634
Moniteau	--	--	16	1	--	--	--	--	54	--	--	--
Montgomery	--	--	24	1	--	--	--	--	19	--	--	--
New Madrid	--	--	--	43	--	--	--	--	133	--	--	38
Osage	--	--	145	13	--	4	--	--	79	4	--	2
Perry	--	--	1	19	--	--	1	4	1	3	2	15
St. Charles	--	--	--	17	--	--	--	--	110	4	--	--
St. Louis	--	--	--	--	--	--	--	--	27	--	--	--
St. Genevieve	--	62	35	14	--	--	5	3	1	1	--	40
Scott	--	--	--	13	--	--	1	1	--	1	--	28
Stoddard	--	--	--	103	--	--	--	--	2	--	--	58
Warren	--	--	--	4	--	--	--	1	110	4	--	25
Total	9	545	370	1,229	1	6	12	16	1,122	33	2	1,236
STATE TOTAL	9	8,671	2,869	2,135	68	34	120	69	2,998	361	174	5,755

(Table 17 continued on next page)

(Table 17 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black Walnut	Yellow poplar	Other hardwoods	All species
EASTERN OZARK UNIT											
Bollinger	48	7	305	719	932	21	49	2	17	--	2,584
Butler	6	8	343	260	392	1	8	--	--	13	1,429
Carter	--	1	1,054	395	1,115	--	5	--	--	--	3,556
Crawford	34	--	2,051	336	913	--	9	--	--	--	3,490
Dent	--	3	2,082	486	1,100	--	9	10	--	--	3,963
Iron	27	--	1,045	616	553	--	59	--	--	--	2,548
Madison	7	1	306	526	561	--	15	2	4	--	1,866
Oregon	5	--	735	1,272	583	--	66	1	--	--	3,186
Reynolds	--	--	1,813	3,004	1,802	65	--	--	--	--	8,193
Ripley	53	40	2,064	177	1,344	50	53	4	--	--	4,710
St. Francois	3	1	60	69	190	--	5	--	--	--	443
Shannon	17	1	3,040	1,202	2,058	--	24	10	--	--	7,744
Washington	31	--	690	1,518	800	--	30	--	--	--	3,866
Wayne	42	21	2,370	1,455	2,256	1	16	--	--	--	7,413
Total	273	83	17,958	12,035	14,599	138	348	29	21	13	54,991
SOUTHWEST OZARK UNIT											
Barry	--	3	313	163	159	--	53	13	--	7	826
Christian	--	--	538	96	333	--	--	17	--	12	1,078
Douglas	--	--	1,411	22	589	--	20	7	--	4	2,375
Howell	11	--	2,096	1,167	1,241	--	36	10	--	--	5,133
Mcdonald	2	4	196	824	338	--	96	8	--	12	1,558
Newton	--	3	90	333	117	--	55	9	--	13	671
Ozark	--	--	450	30	123	--	3	--	--	3	1,402
Stone	--	--	86	212	119	--	3	74	--	--	666
Taney	--	--	149	26	54	--	--	3	--	--	910
Texas	11	--	1,385	868	957	--	75	29	--	--	5,180
Webster	--	--	295	15	139	--	13	22	--	8	530
Wright	--	--	1,059	22	459	--	48	4	--	17	1,773
Total	24	10	8,068	3,778	4,628	--	402	196	--	76	22,102
NORTHWEST OZARK UNIT											
Benton	--	9	17	36	59	--	16	14	--	6	216
Camden	1	5	143	163	237	--	42	12	--	--	740
Cedar	--	1	106	7	42	--	1	47	--	--	231
Dallas	--	--	52	6	53	--	8	7	--	--	141
Hickory	--	4	52	10	63	--	4	8	--	--	235
Laclede	--	--	206	27	388	--	12	11	--	--	712
Maries	--	9	110	173	282	--	25	18	--	7	723
Miller	--	4	36	91	117	--	8	10	--	--	411
Morgan	--	8	7	35	60	--	15	2	--	--	186
Phelps	--	13	665	281	625	--	54	6	--	13	1,747
Polk	--	--	90	96	61	--	--	64	--	--	318
Pulaski	--	7	273	233	387	--	151	18	--	--	1,189
St. Clair	--	19	20	38	38	--	19	18	--	--	211
Total	1	79	1,777	1,196	2,412	--	355	235	--	26	7,060
PRAIRIE UNIT											
Adair	--	36	25	60	104	--	5	3	--	4	281
Andrew	--	13	--	6	16	--	2	42	--	--	112
Atchison	--	--	--	5	6	--	--	7	--	--	34
Audrain	3	145	182	190	236	--	94	61	--	4	999
Barton	--	24	307	24	74	--	24	66	--	--	637
Bates	--	45	--	16	16	--	--	14	--	1	93
Buchanan	--	3	--	8	21	--	3	45	--	--	137
Caldwell	--	11	--	23	33	--	13	63	--	3	219
Carroll	--	86	--	10	19	--	--	19	--	8	213
Cass	--	45	--	12	15	--	--	26	--	--	103
Chariton	3	40	27	83	49	--	19	62	--	--	324
Clark	--	118	142	120	346	--	49	14	--	24	1,132
Clay	--	3	--	7	9	--	--	7	--	2	52
Clinton	--	7	--	12	19	--	4	44	--	3	160

(Table 17 continued on next page)

(Table 17 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black Walnut	Yellow poplar	Other hardwoods	All species
PRAIRIE UNIT	*(continued)*										
Cooper	--	36	1	51	65	--	29	75	--	6	348
Dade	--	1	183	48	82	--	1	134	--	--	481
Daviess	--	9	--	36	58	--	19	36	--	1	250
De Kalb	--	28	1	8	21	--	1	14	--	--	120
Gentry	--	3	--	11	23	--	3	56	--	--	120
Greene	--	--	56	121	80	--	--	191	--	--	454
Grundy	--	82	--	23	32	--	15	7	--	5	266
Harrison	--	70	--	199	214	--	12	81	--	--	656
Henry	--	3	11	24	45	--	10	17	--	--	124
Holt	--	3	--	9	11	--	--	36	--	--	131
Jackson	--	3	--	2	7	--	1	34	--	2	56
Jasper	--	3	6	12	16	--	1	22	--	--	67
Johnson	--	10	7	15	16	--	14	6	--	6	116
Knox	--	90	64	100	228	--	30	2	--	9	642
Lafayette	--	7	--	15	22	--	16	11	--	4	115
Lawrence	--	--	128	34	66	--	7	76	--	--	328
Lewis	1	70	40	46	177	--	38	17	--	3	534
Lincoln	4	4	--	9	236	--	13	1	--	3	289
Linn	1	125	18	117	97	--	24	46	--	7	559
Livingston	--	100	--	27	43	--	12	8	--	8	326
Macon	--	36	32	74	147	--	12	4	--	4	366
Marion	4	65	48	104	231	--	50	8	--	5	619
Mercer	--	1	--	7	17	--	--	--	--	--	25
Monroe	49	117	84	226	191	--	97	2	--	--	895
Nodaway	--	1	--	10	18	--	--	7	--	--	67
Pettis	--	24	7	32	117	--	21	11	--	9	283
Pike	26	46	17	178	230	--	28	19	--	3	635
Platte	--	3	--	8	11	--	--	41	--	--	85
Putnam	--	6	1	12	24	--	--	2	--	--	57
Ralls	3	13	20	35	175	--	23	7	--	--	323
Randolph	3	85	43	229	339	--	28	45	--	3	827
Ray	--	10	--	27	37	--	7	37	--	5	209
Saline	--	54	1	36	35	--	41	45	--	11	410
Schuyler	--	--	--	1	2	--	--	1	--	--	4
Scotland	--	20	57	25	108	--	27	8	--	3	349
Shelby	1	20	70	65	114	--	46	1	--	3	394
Sullivan	--	32	4	22	75	--	--	3	--	--	162
Vernon	--	74	73	90	49	--	23	37	--	--	397
Worth	--	1	--	6	10	--	--	--	--	--	22
Total	98	1,893	1,655	2,670	4,432	--	862	1,621	--	149	16,607
RIVERBORDER UNIT											
Boone	--	17	63	79	120	--	17	32	--	--	373
Callaway	3	3	28	36	334	--	5	1	--	--	464
Cape Girardeau	18	288	652	373	534	7	11	--	46	436	3,358
Cole	--	13	60	78	131	--	20	--	--	--	408
Dunklin	--	3	17	20	30	3	3	--	--	--	91
Franklin	3	8	70	147	408	--	27	5	--	8	853
Gasconade	1	1	57	217	311	--	27	1	--	--	769
Howard	1	93	11	43	61	--	127	70	--	--	556
Jefferson	--	--	46	143	108	--	4	1	4	--	343
Mississippi	--	129	1,046	801	660	--	29	--	--	2,611	6,834
Moniteau	--	23	1	16	62	--	21	42	--	--	236
Montgomery	--	2	17	109	344	--	12	11	--	--	539
New Madrid	--	12	59	51	73	20	25	--	--	154	608
Osage	4	15	42	193	281	--	38	1	--	--	821
Perry	24	3	37	250	438	4	4	2	23	1	840
St. Charles	--	36	5	129	155	--	7	15	--	5	483
St. Louis	--	--	5	38	24	--	--	2	--	--	96
St. Genevieve	6	3	197	182	282	--	20	2	3	--	856
Scott	1	1	20	143	120	22	1	--	10	--	362
Stoddard	7	38	86	360	192	15	18	--	1	290	1,170
Warren	--	4	--	471	327	--	7	--	--	4	957
Total	68	692	2,519	3,879	4,995	71	423	185	87	3,509	21,009
STATE TOTAL	464	2,695	31,977	23,558	31,066	209	2,390	2,266	108	3,773	121,769

Table 18.--Sawtimber removals from timberland for industrial roundwood by Forest Survey Unit, county, and species group, Missouri, 1991

(In thousand board feet) 1/

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
EASTERN OZARK UNIT												
Bollinger	--	981	--	121	--	--	51	43	--	34	--	883
Butler	--	1,324	--	32	--	--	9	--	5	30	6	465
Carter	--	3,524	--	--	--	--	20	--	7	14	1	967
Crawford	--	499	--	--	--	--	--	--	--	7	--	182
Dent	--	505	--	--	--	--	7	--	--	--	--	554
Iron	--	471	26	--	--	--	--	--	--	--	--	517
Madison	--	1,417	--	28	--	--	69	11	--	3	--	539
Oregon	--	1,858	--	--	--	--	--	107	--	16	--	480
Reynolds	--	4,552	23	--	--	--	42	--	--	34	--	2,044
Ripley	--	2,448	--	146	--	--	--	--	11	189	173	1,187
St Francois	--	78	64	37	--	--	18	1	2	1	--	95
Shannon	--	4,110	--	--	--	--	159	--	--	14	--	1,501
Washington	--	3,216	47	--	--	--	--	--	--	69	--	391
Wayne	--	3,953	--	227	--	--	6	--	88	91	1	1,478
Total	--	28,936	160	591	--	--	381	162	113	502	181	11,283
SOUTHWEST OZARK UNIT												
Barry	--	--	60	105	--	--	--	8	19	7	--	89
Christian	--	47	56	39	--	--	--	1	--	--	--	115
Douglas	--	341	54	45	--	--	10	10	--	19	--	685
Howell	--	1,682	--	17	--	--	--	--	--	--	--	817
Mcdonald	--	--	--	60	--	--	--	3	20	58	--	162
Newton	--	--	--	52	--	--	--	2	20	17	--	109
Ozark	--	223	2,642	--	--	--	--	--	--	12	--	190
Stone	--	--	196	30	--	--	--	1	--	--	--	10
Taney	--	--	1,856	10	--	--	--	--	--	--	--	3
Texas	--	2,441	--	18	--	--	21	3	--	14	--	512
Webster	--	--	--	17	--	--	--	7	--	32	--	99
Wright	--	39	4	102	--	--	--	--	--	63	--	403
Total	--	4,773	4,868	495	--	--	31	35	59	222	--	3,194
NORTHWEST OZARK UNIT												
Benton	--	--	159	42	1	1	--	--	56	8	8	12
Camden	--	--	413	15	--	--	--	--	7	4	--	28
Cedar	--	--	23	83	--	--	--	--	--	4	--	4
Dallas	--	--	14	2	--	--	--	3	--	--	--	3
Hickory	--	--	339	34	--	--	--	--	--	--	18	12
Laclede	--	55	170	--	--	--	--	--	--	--	--	66
Maries	--	--	115	57	--	--	--	--	38	16	--	82
Miller	--	--	665	8	--	--	--	--	49	5	--	7
Morgan	--	--	205	15	--	1	--	1	9	8	--	4
Phelps	--	55	23	7	--	--	--	--	--	11	--	268
Polk	--	--	27	--	--	--	--	--	--	--	--	--
Pulaski	--	64	321	59	--	--	--	--	--	5	--	50
St. Clair	--	--	23	138	--	--	--	--	--	0	69	--
Total	--	174	2,497	460	1	2	--	4	159	61	103	536
PRAIRIE UNIT												
Adair	--	--	--	35	10	10	--	--	37	--	--	90
Andrew	--	--	--	6	15	--	--	--	146	7	7	--
Atchison	--	--	--	--	--	--	--	--	99	--	--	--
Audrain	--	--	--	184	--	9	--	--	121	11	15	21
Barton	--	--	--	263	--	--	--	--	--	76	18	95
Bates	--	--	--	4	--	--	--	--	--	--	--	--
Buchanan	--	--	--	8	7	--	--	--	255	15	11	--
Caldwell	--	--	--	16	18	--	--	--	319	20	18	6
Carroll	--	--	--	42	--	--	--	--	335	--	--	--
Cass	--	--	--	17	--	--	--	--	3	--	--	--
Chariton	--	--	--	29	8	8	--	--	155	2	--	--
Clark	--	--	--	75	31	1	--	--	983	71	--	475
Clay	--	--	--	1	--	--	--	--	136	--	--	--
Clinton	--	--	--	16	11	--	--	--	306	24	10	6

(Table 18 continued on next page)

(Table 18 continued)

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
PRAIRIE UNIT	*continued*											
Cooper	--	--	133	55	--	--	--	1	200	1	15	--
Dade	--	--	--	120	--	--	--	--	--	3	--	3
Daviess	--	--	--	11	19	--	--	--	422	20	28	2
De Kalb	--	--	--	9	3	1	--	--	214	7	8	5
Gentry	--	--	--	8	7	--	--	--	80	11	12	--
Greene	--	--	--	24	--	--	--	--	--	--	--	--
Grundy	--	--	--	33	10	--	--	--	511	1	9	--
Harrison	--	--	--	18	15	--	--	--	339	23	32	--
Henry	--	--	27	10	--	1	--	--	9	1	--	11
Holt	--	--	--	2	--	--	--	1	422	--	--	--
Jackson	--	--	--	1	--	--	--	--	39	--	--	--
Jasper	--	--	--	6	--	--	--	--	19	3	--	3
Johnson	--	--	133	45	--	1	--	--	44	1	--	4
Knox	--	--	--	44	28	28	--	--	151	8	--	246
Lafayette	--	--	--	8	2	--	--	2	178	20	4	7
Lawrence	--	--	--	61	--	--	--	2	--	--	--	2
Lewis	--	--	--	32	14	2	--	--	481	35	--	166
Lincoln	--	--	--	31	--	--	--	--	33	--	--	29
Linn	--	--	--	143	7	5	--	--	298	1	--	129
Livingston	--	--	--	54	9	--	--	--	571	18	24	--
Macon	--	--	--	41	10	10	--	--	63	--	--	116
Marion	--	--	--	48	10	7	--	--	310	10	--	118
Mercer	--	--	--	1	--	--	--	--	4	--	--	--
Monroe	--	--	--	23	--	9	--	--	564	16	16	55
Nodaway	--	--	--	6	2	--	--	--	140	14	14	--
Pettis	--	--	204	58	--	1	--	--	58	1	--	4
Pike	--	--	1	186	1	--	--	--	149	7	--	49
Platte	--	--	--	2	--	--	--	--	120	--	--	--
Putnam	--	--	--	6	20	--	--	--	15	--	18	--
Ralls	--	--	--	22	2	--	--	--	158	9	--	44
Randolph	--	--	--	29	8	8	--	--	199	2	2	21
Ray	--	--	--	13	1	--	--	--	428	16	7	10
Saline	--	--	128	47	--	--	--	5	726	9	3	9
Schuyler	--	--	--	--	--	--	--	--	--	--	--	--
Scotland	--	--	--	48	--	--	--	--	190	10	--	243
Shelby	--	--	--	16	7	7	--	--	93	4	--	199
Sullivan	--	--	--	6	2	2	--	--	128	--	--	8
Vernon	--	--	--	68	--	--	--	--	--	9	107	9
Worth	--	--	--	2	--	--	--	--	21	5	7	--
Total	--	--	626	2,033	277	110	--	11	10,272	491	385	2,185
RIVERBORDER UNIT												
Boone	--	--	23	37	--	--	--	--	180	--	--	5
Callaway	--	--	49	21	--	--	--	--	129	--	--	--
Cape Girardeau	--	2,325	--	1,184	--	--	20	19	84	18	2	1,341
Cole	--	--	154	37	--	1	--	--	194	1	--	--
Dunklin	49	--	--	1	--	--	--	--	--	11	--	9
Franklin	--	4	5	31	--	--	--	--	581	31	--	212
Gasconade	--	--	222	7	--	4	--	--	267	4	--	233
Howard	--	--	--	12	3	3	--	--	745	1	--	5
Jefferson	--	98	7	18	--	--	--	12	22	--	--	--
Mississippi	--	--	--	3,905	--	--	--	--	1,077	--	--	3,365
Moniteau	--	--	40	4	--	--	--	--	230	--	--	--
Montgomery	--	--	27	5	--	--	--	--	111	--	--	--
New Madrid	--	--	--	234	--	--	--	--	765	--	--	201
Osage	--	--	579	52	--	16	--	--	457	17	--	3
Perry	--	--	1	70	1	--	6	15	6	10	7	56
St. Charles	--	--	--	67	1	--	--	1	632	17	--	1
St. Louis	--	--	--	1	1	--	--	--	159	--	--	1
St. Genevieve	--	319	39	46	--	--	18	11	7	5	--	149
Scott	--	--	--	47	--	--	3	3	--	4	2	110
Stoddard	--	--	--	520	--	--	2	1	10	1	--	253
Warren	--	--	--	18	--	--	--	3	630	17	--	97
Total	49	2,746	1,146	6,317	6	24	49	65	6,286	137	11	6,041
STATE TOTAL	49	36,629	9,297	9,896	284	136	461	277	16,889	1,413	680	23,239

(Table 18 continued on next page)

(Table 18 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black Walnut	Yellow poplar	Other hardwoods	All species
EASTERN OZARK UNIT											
Bollinger	187	30	1,118	2,629	3,654	82	189	13	63	--	10,078
Butler	24	30	1,256	953	1,517	3	33	--	--	52	5,739
Carter	--	6	3,852	1,446	4,095	--	20	--	--	--	13,952
Crawford	129	--	7,502	1,229	3,828	--	37	--	--	--	13,413
Dent	--	8	7,618	1,716	4,046	--	36	49	--	--	14,539
Iron	104	--	3,822	2,252	2,099	--	224	--	--	--	9,515
Madison	30	3	1,123	1,922	2,196	--	54	8	18	--	7,421
Oregon	6	--	2,592	4,653	2,107	--	257	4	--	--	12,080
Reynolds	--	--	6,631	10,967	6,915	249	--	--	--	--	31,457
Ripley	203	156	7,575	647	5,172	195	204	18	--	--	18,324
St. Francois	11	3	220	339	928	--	20	2	--	--	1,819
Shannon	25	3	10,749	4,376	7,696	--	87	52	--	--	28,772
Washington	123	--	2,525	5,552	3,033	--	118	--	--	--	15,074
Wayne	162	81	8,673	5,324	8,458	3	62	--	1	--	28,608
Total	1,004	320	65,256	44,005	55,744	532	1,341	146	82	52	210,791
SOUTHWEST OZARK UNIT											
Barry	--	9	1,146	597	588	--	205	58	--	28	2,919
Christian	--	--	1,991	354	1,481	--	--	77	--	43	4,204
Douglas	--	--	5,163	78	2,235	--	76	31	--	19	8,766
Howell	16	--	8,405	4,241	5,018	--	140	47	--	--	20,383
Mcdonald	7	18	717	3,016	1,242	--	369	37	--	43	5,752
Newton	2	9	329	1,221	428	--	212	42	--	48	2,491
Ozark	--	--	1,646	107	478	--	12	1	--	12	5,323
Stone	--	--	320	778	439	--	14	331	--	1	2,120
Taney	--	--	545	95	199	--	--	13	--	--	2,721
Texas	16	--	4,555	3,098	3,436	--	247	108	--	--	14,469
Webster	--	--	1,119	56	550	--	48	100	--	32	2,060
Wright	--	--	3,869	75	1,788	--	186	24	--	63	6,616
Total	41	36	29,805	13,716	17,882	--	1,509	869	--	289	77,824
NORTHWEST OZARK UNIT											
Benton	--	43	64	134	233	--	76	63	--	35	935
Camden	5	23	524	594	888	--	158	62	--	--	2,721
Cedar	--	4	387	30	156	--	4	210	--	--	905
Dallas	--	--	188	25	208	--	30	30	--	--	503
Hickory	--	18	189	36	238	--	18	40	--	--	942
Laclede	--	--	756	99	1,542	--	46	53	--	--	2,787
Maries	--	36	315	551	1,044	--	78	81	--	28	2,441
Miller	2	15	134	331	453	--	34	54	--	--	1,757
Morgan	--	32	27	129	243	--	56	10	--	--	748
Phelps	--	50	2,437	1,011	2,397	--	210	29	--	49	6,547
Polk	--	--	329	352	226	--	2	288	--	--	1,224
Pulaski	--	33	996	849	1,447	--	581	86	--	--	4,491
St. Clair	--	69	69	141	139	--	69	86	--	--	803
Total	7	323	6,415	4,282	9,214	--	1,362	1,092	--	112	26,804
PRAIRIE UNIT											
Adair	--	135	90	220	438	--	20	15	--	15	1,115
Andrew	--	49	--	23	64	--	7	189	--	2	515
Atchison	--	2	--	18	24	--	--	29	--	--	172
Audrain	11	557	664	696	922	--	366	273	--	14	3,864
Barton	--	94	1,124	95	276	--	94	296	--	--	2,431
Bates	--	173	--	60	62	--	--	61	--	4	364
Buchanan	--	15	--	30	82	--	8	201	--	2	634
Caldwell	--	44	1	81	123	--	49	280	--	14	989
Carroll	--	331	2	42	72	--	--	88	--	33	945
Cass	--	173	--	45	58	--	1	117	--	2	416
Chariton	8	155	97	304	182	--	71	278	--	1	1,298
Clark	--	588	562	506	1,512	--	191	77	--	101	5,173
Clay	--	18	--	25	37	--	--	29	--	12	258
Clinton	--	29	--	44	74	--	16	197	--	15	748

(Table 18 continued on next page)

(Table 18 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black Walnut	Yellow poplar	Other hardwoods	All species
PRAIRIE UNIT	*continued*										
Cooper	--	152	7	186	240	--	129	341	--	37	1,497
Dade	--	3	666	181	304	--	3	602	--	--	1,885
Daviess	--	38	2	134	214	--	70	159	--	4	1,123
De Kalb	--	109	5	31	79	--	3	66	--	1	541
Gentry	--	15	--	44	87	--	9	253	--	1	527
Greene	--	--	208	444	318	--	--	857	--	--	1,851
Grundy	--	317	1	84	120	--	55	31	--	22	1,194
Harrison	--	270	--	727	792	--	43	362	--	--	2,621
Henry	--	14	42	86	166	--	41	81	--	2	491
Holt	--	10	--	35	45	--	--	158	--	--	673
Jackson	--	18	--	9	27	--	6	154	--	13	267
Jasper	--	9	22	48	59	--	3	100	--	--	272
Johnson	--	49	27	55	66	--	67	26	--	38	556
Knox	--	349	236	368	977	--	113	10	--	37	2,595
Lafayette	--	25	2	57	78	--	62	49	--	17	511
Lawrence	--	--	468	125	242	--	28	341	--	2	1,271
Lewis	4	330	156	185	753	--	144	81	--	20	2,403
Lincoln	15	14	--	35	1,220	--	47	6	--	11	1,441
Linn	5	481	66	429	358	--	93	207	--	25	2,247
Livingston	--	385	2	99	162	--	44	36	--	33	1,437
Macon	--	140	118	270	638	--	43	24	--	16	1,489
Marion	17	247	177	382	963	--	194	39	--	22	2,544
Mercer	--	3	--	29	62	--	--	--	--	--	99
Monroe	190	450	306	825	698	--	373	11	--	--	3,536
Nodaway	--	6	--	42	69	--	2	29	--	--	324
Pettis	--	103	27	118	458	--	92	48	--	50	1,222
Pike	100	178	61	654	949	--	111	88	--	12	2,546
Platte	--	13	--	30	43	--	--	184	--	2	394
Putnam	--	23	7	47	84	--	2	12	--	--	234
Ralls	14	49	70	128	806	--	90	32	--	1	1,425
Randolph	10	325	160	837	1,323	--	112	205	--	11	3,252
Ray	--	42	2	103	137	--	27	166	--	21	973
Saline	--	228	3	135	126	--	175	199	--	55	1,848
Schuyler	--	1	--	5	8	--	--	8	--	--	22
Scotland	--	78	231	128	547	--	104	39	--	10	1,628
Shelby	3	75	257	240	476	--	174	5	--	9	1,565
Sullivan	--	125	12	80	275	--	1	15	--	2	656
Vernon	--	286	269	332	181	--	85	168	--	--	1,514
Worth	--	3	--	21	38	--	2	--	--	--	99
Total	377	7,326	6,150	9,957	18,114	--	3,370	7,322	--	689	69,695
RIVERBORDER UNIT											
Boone	2	67	231	293	487	--	63	146	--	1	1,535
Callaway	9	11	102	135	1,640	--	20	7	--	1	2,124
Cape Girardeau	69	1,526	3,321	1,433	2,234	26	49	2	178	2,263	16,094
Cole	1	50	221	288	556	--	75	4	--	--	1,582
Dunklin	--	12	63	71	139	12	12	--	--	--	379
Franklin	11	31	258	540	1,898	--	107	22	--	31	3,762
Gasconade	4	4	206	791	1,287	--	105	7	--	--	3,141
Howard	5	372	43	163	239	--	494	318	--	1	2,404
Jefferson	--	--	167	527	405	--	18	7	18	--	1,299
Mississippi	--	663	5,557	4,249	3,501	--	126	--	--	13,730	36,173
Moniteau	--	100	4	61	275	--	83	193	--	--	990
Montgomery	--	7	63	400	1,607	--	43	50	--	2	2,315
New Madrid	--	58	314	270	328	79	98	--	--	807	3,154
Osage	16	63	140	697	1,102	--	153	3	--	--	3,298
Perry	95	10	138	917	1,767	14	16	9	85	5	3,228
St. Charles	1	137	17	472	639	--	27	68	--	20	2,100
St. Louis	1	1	17	139	88	--	1	10	--	1	420
St. Genevieve	24	11	721	753	1,186	--	77	12	8	1	3,387
Scott	4	4	73	527	438	83	4	--	38	--	1,340
Stoddard	30	189	445	1,662	810	57	68	--	3	1,519	5,570
Warren	--	16	--	1,723	1,549	--	26	1	--	17	4,097
Total	272	3,332	12,101	16,111	22,175	271	1,665	859	330	18,399	98,392
STATE TOTAL	1,701	11,337	119,727	88,071	123,129	803	9,247	10,288	412	19,541	483,506

1/ International 1/4-inch rule.

Table 19.--Harvest residue generated by industrial roundwood harvesting by Forest Survey Unit, county, and species group, Missouri, 1991

(In thousand cubic feet)

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
EASTERN OZARK UNIT												
Bollinger	--	105	--	24	--	--	12	11	--	8	--	159
Butler	--	143	--	7	--	--	2	--	--	6	1	108
Carter	--	378	--	--	--	--	4	--	--	3	--	223
Crawford	--	54	--	--	--	--	--	--	--	1	--	42
Dent	--	54	--	--	--	--	1	--	--	--	--	121
Iron	--	50	15	--	--	--	--	--	--	--	--	119
Madison	--	152	--	6	--	--	16	3	--	--	--	125
Oregon	--	200	--	--	--	--	--	24	--	4	--	108
Reynolds	--	487	14	--	--	--	9	--	--	8	--	465
Ripley	--	262	--	34	--	--	--	--	1	43	41	256
St. Francois	--	9	40	3	--	--	1	--	--	--	--	10
Shannon	--	434	--	--	--	--	37	--	--	3	--	335
Washington	--	347	31	--	--	--	--	--	--	16	--	90
Wayne	--	427	--	52	--	--	1	--	9	22	--	343
Total	--	3,102	100	126	--	--	83	38	10	114	42	2,504
SOUTHWEST OZARK UNIT												
Barry	--	--	39	17	--	--	--	2	1	2	--	18
Christian	--	5	21	8	--	--	--	--	--	--	--	25
Douglas	--	35	17	11	--	--	3	3	--	4	--	158
Howell	--	179	--	4	--	--	--	--	--	--	--	125
Mcdonald	--	--	--	14	--	--	--	--	1	14	--	37
Newton	--	--	--	12	--	--	--	--	1	4	--	25
Ozark	--	26	215	--	--	--	--	--	--	3	--	43
Stone	--	--	110	6	--	--	--	--	--	--	--	1
Taney	--	--	309	3	--	--	--	--	--	--	--	--
Texas	--	177	--	1	--	--	4	--	--	3	--	103
Webster	--	--	--	3	--	--	--	--	--	7	--	20
Wright	--	4	2	23	--	--	--	--	--	15	--	93
Total	--	426	713	102	--	--	7	5	3	52	--	648
NORTHWEST OZARK UNIT												
Benton	--	--	4	2	--	--	--	--	2	2	2	3
Camden	--	--	47	2	--	--	--	--	--	--	--	6
Cedar	--	--	--	18	--	--	--	--	--	--	--	--
Dallas	--	--	8	--	--	--	--	--	--	--	--	--
Hickory	--	--	20	8	--	--	--	--	--	--	4	--
Laclede	--	5	11	--	--	--	--	--	--	--	--	15
Maries	--	--	3	11	--	--	--	--	3	--	--	14
Miller	--	--	18	2	--	--	--	--	5	1	--	1
Morgan	--	--	11	2	--	--	--	--	1	2	2	--
Phelps	--	5	--	1	--	--	--	--	--	3	--	61
Polk	--	--	2	--	--	--	--	--	--	--	--	--
Pulaski	--	5	5	14	--	--	--	--	--	--	--	11
St. Clair	--	--	--	32	--	--	--	--	--	--	16	--
Total	--	15	129	92	--	--	--	--	11	8	24	111
PRAIRIE UNIT												
Adair	--	--	--	8	3	3	--	--	3	--	--	22
Andrew	--	--	--	1	4	--	--	--	14	1	2	--
Atchison	--	--	--	--	--	--	--	--	9	--	--	--
Audrain	--	--	--	41	--	2	--	--	13	3	4	4
Barton	--	--	--	55	--	--	--	--	--	18	4	20
Bates	--	--	--	--	--	--	--	--	--	--	--	--
Buchanan	--	--	--	2	2	--	--	--	24	4	3	--
Caldwell	--	--	--	4	4	--	--	--	32	4	4	1
Carroll	--	--	--	9	--	--	--	--	30	--	--	--
Cass	--	--	--	3	--	--	--	--	--	--	--	--
Chariton	--	--	--	6	2	2	--	--	16	--	--	--
Clark	--	--	--	7	1	--	--	--	57	5	--	51
Clay	--	--	--	--	--	--	--	--	9	--	--	--
Clinton	--	--	--	3	3	--	--	--	29	6	3	1

(Table 19 continued on next page)

(Table 19 continued)

Unit and county	Cypress	Shortleaf pine	Red cedar	Ash	Bass-wood	Birch	Tupelo	Black cherry	Cotton-wood	Elm	Pecan	Other Hickory
PRAIRIE UNIT	*(continued)*											
Cooper	--	--	3	4	--	--	--	--	5	--	4	--
Dade	--	--	--	26	--	--	--	--	--	--	--	--
Daviess	--	--	--	3	4	--	--	--	41	4	6	--
De Kalb	--	--	--	2	--	--	--	--	21	2	2	1
Gentry	--	--	--	2	2	--	--	--	8	3	3	--
Greene	--	--	--	4	--	--	--	--	--	--	--	--
Grundy	--	--	--	7	3	--	--	--	51	--	2	--
Harrison	--	--	--	4	4	--	--	--	33	5	7	--
Henry	--	--	4	1	--	--	--	--	1	--	--	3
Holt	--	--	--	--	--	--	--	--	41	--	--	--
Jackson	--	--	--	--	--	--	--	--	2	--	--	--
Jasper	--	--	--	--	--	--	--	--	1	--	--	--
Johnson	--	--	3	1	--	--	--	--	1	--	--	--
Knox	--	--	--	11	6	6	--	--	16	2	--	56
Lafayette	--	--	--	2	--	--	--	--	17	4	--	2
Lawrence	--	--	--	14	--	--	--	--	--	--	--	--
Lewis	--	--	--	6	--	--	--	--	28	3	--	29
Lincoln	--	--	--	4	--	--	--	--	3	--	--	1
Linn	--	--	--	32	1	1	--	--	30	--	--	30
Livingston	--	--	--	14	2	--	--	--	58	4	6	--
Macon	--	--	--	9	3	3	--	--	7	--	--	27
Marion	--	--	--	11	3	1	--	--	32	3	--	28
Mercer	--	--	--	--	--	--	--	--	--	--	--	--
Monroe	--	--	--	4	--	2	--	--	58	4	4	14
Nodaway	--	--	--	1	--	--	--	--	14	3	3	--
Pettis	--	--	4	2	--	--	--	--	2	--	--	--
Pike	--	--	--	42	--	--	--	--	16	1	--	11
Platte	--	--	--	--	--	--	--	--	11	--	--	--
Putnam	--	--	--	1	4	--	--	--	1	--	4	--
Ralls	--	--	--	4	--	--	--	--	16	2	--	11
Randolph	--	--	--	6	2	2	--	--	21	--	--	4
Ray	--	--	--	3	--	--	--	--	41	4	2	3
Saline	--	--	2	2	--	--	--	1	43	2	--	2
Schuyler	--	--	--	--	--	--	--	--	--	--	--	--
Scotland	--	--	--	5	--	--	--	--	19	2	--	29
Shelby	--	--	--	4	1	1	--	--	9	--	--	45
Sullivan	--	--	--	1	--	--	--	--	13	--	--	2
Vernon	--	--	--	14	--	--	--	--	--	2	24	2
Worth	--	--	--	--	--	--	--	--	1	1	1	--
Total	--	--	16	385	54	23	--	1	897	92	88	399
RIVERBORDER UNIT												
Boone	--	--	--	7	--	--	--	--	18	--	--	1
Callaway	--	--	16	4	--	--	--	--	13	--	--	--
Cape Girardeau	--	36	--	39	--	--	4	4	6	4	--	69
Cole	--	--	33	8	--	--	--	--	19	--	--	--
Dunklin	5	--	--	--	--	--	--	--	--	3	--	2
Franklin	--	--	3	7	--	--	--	--	60	7	--	50
Gasconade	--	--	4	--	--	--	--	--	27	--	--	55
Howard	--	--	--	2	--	--	--	--	56	--	--	1
Jefferson	--	11	5	4	--	--	--	3	2	--	--	--
Mississippi	--	--	--	61	--	--	--	--	103	--	--	52
Moniteau	--	--	8	--	--	--	--	--	3	--	--	--
Montgomery	--	--	17	--	--	--	--	--	11	--	--	--
New Madrid	--	--	--	3	--	--	--	--	78	--	--	3
Osage	--	--	41	11	--	4	--	--	47	4	--	--
Perry	--	--	--	16	--	--	1	4	--	3	2	14
St. Charles	--	--	--	15	--	--	--	--	65	4	--	--
St. Louis	--	--	--	--	--	--	--	--	16	--	--	--
St. Genevieve	--	35	24	5	--	--	1	3	--	1	--	23
Scott	--	--	--	11	--	--	--	--	--	--	--	25
Stoddard	--	--	--	22	--	--	--	--	--	--	--	30
Warren	--	--	--	4	--	--	--	--	65	4	--	22
Total	5	82	151	219	--	4	6	14	589	30	2	347
STATE TOTAL	5	3,625	1,109	924	54	27	96	58	1,510	296	156	4,009

(Table 19 continued on next page)

(Table19 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black walnut	Yellow poplar	Other hardwoods	All species
EASTERN OZARK UNIT											
Bollinger	42	6	198	470	533	19	43	1	15	--	1,646
Butler	6	7	224	169	232	--	8	--	--	13	926
Carter	--	1	685	259	722	--	4	--	--	--	2,279
Crawford	30	--	1,335	219	450	--	8	--	--	--	2,139
Dent	--	2	1,359	299	632	--	8	4	--	--	2,480
Iron	24	--	682	403	338	--	52	--	--	--	1,683
Madison	6	--	199	343	321	--	14	1	4	--	1,190
Oregon	--	--	449	830	348	--	59	--	--	--	2,022
Reynolds	--	--	1,180	1,952	1,034	58	--	--	--	--	5,207
Ripley	47	36	1,336	116	801	45	47	3	--	--	3,068
St Francois	1	--	39	20	54	--	4	--	--	--	181
Shannon	--	--	1,872	778	1,128	--	20	4	--	--	4,611
Washington	28	--	450	991	491	--	28	--	--	--	2,472
Wayne	37	19	1,545	949	1,412	--	15	--	--	--	4,831
Total	221	71	11,553	7,798	8,496	122	310	13	19	13	34,735
SOUTHWEST OZARK UNIT											
Barry	--	2	202	104	99	--	47	5	--	6	544
Christian	--	--	341	60	138	--	--	6	--	11	615
Douglas	--	--	920	14	361	--	18	3	--	4	1,551
Howell	--	--	950	752	534	--	32	5	--	--	2,581
Mcdonald	2	4	128	537	219	--	86	4	--	11	1,057
Newton	--	2	58	217	76	--	50	5	--	11	461
Ozark	--	--	293	19	73	--	3	--	--	3	678
Stone	--	--	48	131	71	--	3	36	--	--	406
Taney	--	--	98	17	36	--	--	1	--	--	464
Texas	--	--	707	502	451	--	52	12	--	--	2,012
Webster	--	--	177	10	78	--	11	9	--	7	322
Wright	--	--	691	14	264	--	42	1	--	15	1,164
Total	2	8	4,613	2,377	2,400	--	344	87	--	68	11,855
NORTHWEST OZARK UNIT											
Benton	--	2	12	24	33	--	9	8	--	--	103
Camden	1	3	93	107	147	--	37	2	--	--	445
Cedar	--	--	69	1	25	--	--	19	--	--	132
Dallas	--	--	34	4	32	--	7	4	--	--	89
Hickory	--	4	34	6	39	--	4	4	--	--	123
Laclede	--	--	135	17	213	--	11	4	--	--	411
Maries	--	8	45	88	122	--	15	9	--	6	324
Miller	--	3	24	60	67	--	8	1	--	--	190
Morgan	--	7	5	23	30	--	14	--	--	--	97
Phelps	--	11	434	178	367	--	47	3	--	11	1,121
Polk	--	--	58	62	39	--	--	31	--	--	192
Pulaski	--	4	176	152	236	--	135	5	--	--	742
St Clair	--	16	14	24	24	--	16	9	--	--	151
Total	1	58	1,133	745	1,374	--	303	99	--	17	4,120
PRAIRIE UNIT											
Adair	--	32	17	39	50	--	4	1	--	4	186
Andrew	--	11	--	2	7	--	2	19	--	--	63
Atchison	--	--	--	2	2	--	--	4	--	--	17
Audrain	3	130	118	124	137	--	84	33	--	3	699
Barton	--	22	199	11	45	--	22	28	--	--	424
Bates	--	41	--	10	7	--	--	8	--	--	66
Buchanan	--	3	--	4	11	--	2	22	--	--	77
Caldwell	--	9	--	14	18	--	11	31	--	3	135
Carroll	--	76	--	4	9	--	--	9	--	8	145
Cass	--	41	--	7	7	--	--	13	--	--	71
Chariton	2	36	17	54	30	--	18	34	--	--	217
Clark	--	31	78	55	142	--	41	1	--	15	484
Clay	--	1	--	2	2	--	--	4	--	--	18
Clinton	--	6	--	6	10	--	4	22	--	3	96

(Table 19 continued on next page)

(Table 19 continued)

Unit and county	Hard maple	Soft maple	Black oak	Red oak	White oak	Sweet-gum	Syca-more	Black walnut	Yellow poplar	Other hardwoods	All species
PRAIRIE UNIT	*continued*										
Cooper	--	16	1	32	36	--	15	39	--	--	155
Dade	--	--	119	25	50	--	--	56	--	--	276
Daviess	--	8	--	20	32	--	16	17	--	--	151
De Kalb	--	25	--	4	12	--	--	7	--	--	76
Gentry	--	3	--	5	12	--	2	24	--	--	64
Greene	--	--	34	76	45	--	--	90	--	--	249
Grundy	--	74	--	14	17	--	14	4	--	4	190
Harrison	--	62	--	125	133	--	11	40	--	--	424
Henry	--	3	7	15	26	--	9	9	--	--	78
Holt	--	2	--	4	5	--	--	17	--	--	69
Jackson	--	--	--	1	2	--	1	17	--	--	23
Jasper	--	2	4	7	9	--	--	10	--	--	33
Johnson	--	3	5	9	8	--	7	3	--	--	40
Knox	--	80	42	66	106	--	27	--	--	8	426
Lafayette	--	6	--	10	14	--	15	5	--	4	79
Lawrence	--	--	83	20	42	--	6	33	--	--	198
Lewis	--	28	24	26	76	--	33	5	--	--	258
Lincoln	4	3	--	6	32	--	11	--	--	3	67
Linn	1	112	12	77	62	--	22	25	--	6	411
Livingston	--	88	--	15	24	--	11	4	--	8	234
Macon	--	32	20	47	61	--	11	1	--	4	225
Marion	4	57	31	68	107	--	45	1	--	4	395
Mercer	--	--	--	2	7	--	--	--	--	--	9
Monroe	43	103	55	148	124	--	86	1	--	--	646
Nodaway	--	1	--	5	9	--	--	4	--	--	40
Pettis	--	15	5	20	26	--	12	5	--	1	92
Pike	24	41	12	116	116	--	26	9	--	3	417
Platte	--	3	--	2	4	--	--	19	--	--	39
Putnam	--	5	1	7	14	--	--	1	--	--	38
Ralls	3	11	14	23	57	--	22	1	--	--	164
Randolph	3	76	28	148	156	--	26	25	--	3	500
Ray	--	9	--	15	18	--	6	17	--	4	122
Saline	--	16	--	24	20	--	16	25	--	4	157
Schuyler	--	--	--	--	1	--	--	--	--	--	1
Scotland	--	16	31	4	23	--	24	1	--	2	156
Shelby	--	18	44	43	55	--	41	--	--	2	263
Sullivan	--	27	2	15	47	--	--	1	--	--	108
Vernon	--	66	48	56	30	--	20	17	--	--	279
Worth	--	--	--	2	6	--	--	--	--	--	11
Total	87	1,450	1,051	1,636	2,101	--	723	762	--	96	9,861
RIVERBORDER UNIT											
Boone	--	15	42	50	59	--	15	14	--	--	221
Callaway	2	3	18	23	88	--	4	--	--	--	171
Cape Girardeau	16	28	106	216	259	6	4	--	41	36	874
Cole	--	11	39	50	62	--	18	--	--	--	240
Dunklin	--	3	12	14	11	3	3	--	--	--	56
Franklin	3	7	45	96	145	--	24	3	--	7	457
Gasconade	--	--	38	141	157	--	24	--	--	--	446
Howard	1	65	7	28	29	--	102	36	--	--	327
Jefferson	--	--	30	93	65	--	4	--	4	--	221
Mississippi	--	16	86	67	56	--	5	--	--	213	659
Moniteau	--	2	--	11	24	--	7	23	--	--	78
Montgomery	--	2	12	71	109	--	11	5	--	--	238
New Madrid	--	4	5	4	27	18	22	--	--	13	177
Osage	4	11	23	124	141	--	31	--	--	--	441
Perry	22	3	24	163	235	3	4	1	20	1	516
St. Charles	--	32	3	84	61	--	6	8	--	4	282
St. Louis	--	--	3	24	15	--	--	--	--	--	58
St. Genevieve	5	3	129	94	137	--	18	1	2	--	481
Scott	--	--	14	93	79	20	--	--	9	--	251
Stoddard	6	10	11	116	90	14	14	--	--	24	337
Warren	--	4	--	306	97	--	6	--	--	4	512
Total	59	219	647	1,868	1,946	64	322	91	76	302	7,043
STATE TOTAL	370	1,806	18,997	14,424	16,317	186	2,002	1,052	95	496	67,614

Table 20.--Residue produced at primary wood-using mills by type of material, type of use, and Forest Survey Unit, Missouri, 1991

(In thousand tons, green weight)

Survey Unit and type of use	Wood residue						Bark	
	Total		Coarse 1/		Fine 2/			
	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood	Softwood	Hardwood
EASTERN OZARK								
Fiber products	3.29	26.08	3.29	26.08	--	--	--	--
Charcoal	30.45	298.68	28.47	266.77	1.98	31.91	11.90	120.78
Industrial fuel	3.65	38.36	1.07	18.31	2.58	20.05	--	2.50
Domestic fuel	0.07	10.11	0.07	10.11	--	--	0.01	4.07
Miscellaneous 3/	6.68	47.97	4.34	27.14	2.34	20.83	3.60	32.10
Not used	16.81	166.58	1.21	12.97	15.60	153.62	1.79	9.80
Total	60.95	587.78	38.45	361.38	22.50	226.41	17.30	169.25
SOUTHWEST OZARK								
Fiber products	--	6.70	--	6.70	--	--	--	--
Charcoal	7.54	106.16	7.46	95.32	0.08	10.84	2.97	37.76
Industrial fuel	0.12	8.78	--	3.63	0.12	5.15	--	1.38
Domestic fuel	0.09	8.64	0.09	8.64	--	--	0.02	7.08
Miscellaneous 3/	11.23	15.34	6.31	0.14	4.92	15.20	2.10	8.58
Not used	3.94	42.66	0.62	2.55	3.32	40.11	4.24	2.43
Total	22.92	188.28	14.48	116.98	8.44	71.30	9.33	57.23
NORTHWEST OZARK								
Fiber products	--	--	--	--	--	--	--	--
Charcoal	--	25.88	--	25.88	--	--	0.07	13.20
Industrial fuel	0.38	2.98	--	0.90	0.38	2.08	--	0.56
Domestic fuel	0.08	6.45	0.08	6.45	--	--	0.01	2.77
Miscellaneous 3/	0.67	6.28	0.65	0.31	0.02	5.97	0.17	0.23
Not used	0.04	14.49	0.01	0.45	0.03	14.04	1.25	0.44
Total	1.17	56.08	0.74	33.99	0.43	22.09	1.50	17.20
PRAIRIE								
Fiber products	--	24.09	--	23.01	--	1.08	--	1.95
Charcoal	--	18.64	--	15.52	--	3.12	--	5.85
Industrial fuel	--	38.17	--	22.89	--	15.28	0.10	4.40
Domestic fuel	0.03	26.52	0.03	26.52	--	--	0.01	10.37
Miscellaneous 3/	0.02	59.34	--	22.69	0.02	36.65	0.15	27.72
Not used	--	58.48	--	25.53	--	32.95	--	11.30
Total	0.05	225.24	0.03	136.16	0.02	89.08	0.26	61.59
RIVERBORDER								
Fiber products	--	58.64	--	58.64	--	--	--	--
Charcoal	--	17.84	--	16.76	--	1.08	--	5.57
Industrial fuel	0.02	43.43	0.02	13.76	--	29.67	--	3.76
Domestic fuel	0.16	7.75	0.16	7.75	--	--	0.02	3.73
Miscellaneous 3/	1.49	24.30	0.90	0.19	0.59	24.11	0.42	30.51
Not used	0.20	17.75	0.10	3.24	0.10	14.51	0.03	1.80
Total	1.87	169.71	1.18	100.34	0.69	69.37	0.47	45.37
STATE TOTAL								
Fiber products	3.29	115.51	3.29	114.43	--	1.08	--	1.95
Charcoal	37.99	467.20	35.93	420.25	2.06	46.95	14.94	183.16
Industrial fuel	4.17	131.72	1.09	59.49	3.08	72.23	0.10	12.60
Domestic fuel	0.43	59.47	0.43	59.47	--	--	0.07	28.02
Miscellaneous 3/	20.09	153.23	12.20	50.47	7.89	102.76	6.44	99.14
Not used	20.99	299.98	1.94	44.74	19.05	255.24	7.31	25.77
Total	86.96	1,227.11	54.88	748.85	32.08	478.26	28.86	350.64

1/ Suitable for chipping such as slabs,edgings,veneer cores,etc.

2/ Not suitable for chipping such as sawdust,veneer clippings,etc.

3/ Livestock bedding, mulch, small dimension, and specialty items.

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Hackett, Ronald L.; Jones, Shelby; Piva, Ronald J.
1993. **Missouri timber industry—an assessment of timber product output and use, 1991.** Resour. Bull. NC-151. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station. 46 p.

Discusses recent Missouri forest industry trends; production and receipts of saw logs; and production of charcoal, veneer logs, cooperage logs, and other products in 1991. Reports on logging residue, on wood and bark residue generated at primary wood-using mills, and on disposition of this residue.

KEY WORDS: Saw logs, charcoal, cooperage, veneer logs, roundwood, residue.

Our job at the North Central Forest Experiment Station is discovering and creating new knowledge and technology in the field of natural resources and conveying this information to the people who can use it. As a new generation of forests emerges in our region, managers are confronted with two unique challenges: (1) Dealing with the great diversity in composition, quality, and ownership of the forests, and (2) Reconciling the conflicting demands of the people who use them. Helping the forest manager meet these challenges while protecting the environment is what research at North Central is all about.